4.12 Common Services Tools

This section describes the tools used by DAAC operators on a day-to-day basis:

1. Common Desktop Environment (CDE) Tool
2. MS Office
3. Netscape Communicator
4. Netscape Enterprise Server
5. EOSView
6. User Registration
7. Subscription Server
8. Java Data Acquisition Requests Tool (JDAR)
9. Earth Science Online Directory (ESOD) Tool
10. Aster On-Demand Product Request Form

This page intentionally left blank.

4.12.1 Common Desktop Environment

The ECS uses the Common Desktop Environment (CDE) COTS package to manage X windows. It is a commercial graphical user interface for UNIX supporting AIX, Digital UNIX, HP/UX, and Solaris operating systems. It provides users registered at an ECS site with generalized support for performing the basic operations listed in Table 4.12.1-1

Table 4.12.1-1. Common ECS Operator Functions Performed with CDE

Operating Function	GUI	Description	When and Why to Use
Start a desktop session	Basic login with userid and password	Invokes the CDE window manager	Access an ECS host
Use the Front Panel	Front Panel window	Contains set of controls for performing common tasks, i.e.,calendar, email, clock, print, file management.	As needed during work session.
Manage files	File Manager	File management tool	Perform file navigation/manipulation.
Use Application Manager	Application Manager	How to run applications using Application Manager, the main repository for applications in CDE	Need to invoke applications.
Customize the desktop environment	Style Manager	Allow for customizing the look and behavior of desktop.	Need to customize desktop environment
Use text editor	Text Editor	Supports creation/editting of short documents, e.g., memos, mail, resource files	Need to create short documents
Use mailer	Mailer	Allows for sending/receiving email messages.	Need to access email
Print	Printing	Explains how to access printers	Need to print/change default printer.
Use Terminal	Terminal	Explains how to display and customize terminal emulator windows on desktop	Need to access control terminal window
Use Icon editor	Icon Editor	Creates files for use as desktop icons or backdrops	Need to create icons/backdrops
Use Image Viewer	Image Viewer	Allows for capture, viewing, editing, printing, and translation of monochrome/color image files.	Need to perform image manipulation.
Use Address Manager	Address Manager	How to find cards on users, hosts, and systems and perform operations on them.	Need to access/manipulate info on users, hosts, systems.

4.12.1.1 Quick Start Using Common Desktop Environment

After being registered as an ECS user by the site administrator, the user accesses the CDE window manager by logging in to an ECS host using a defined UserID and password.

4.12.1.2 CDE Main Screen

Figure 4.12.1-1 presents an example of the type of support provided by the CDE window manager.

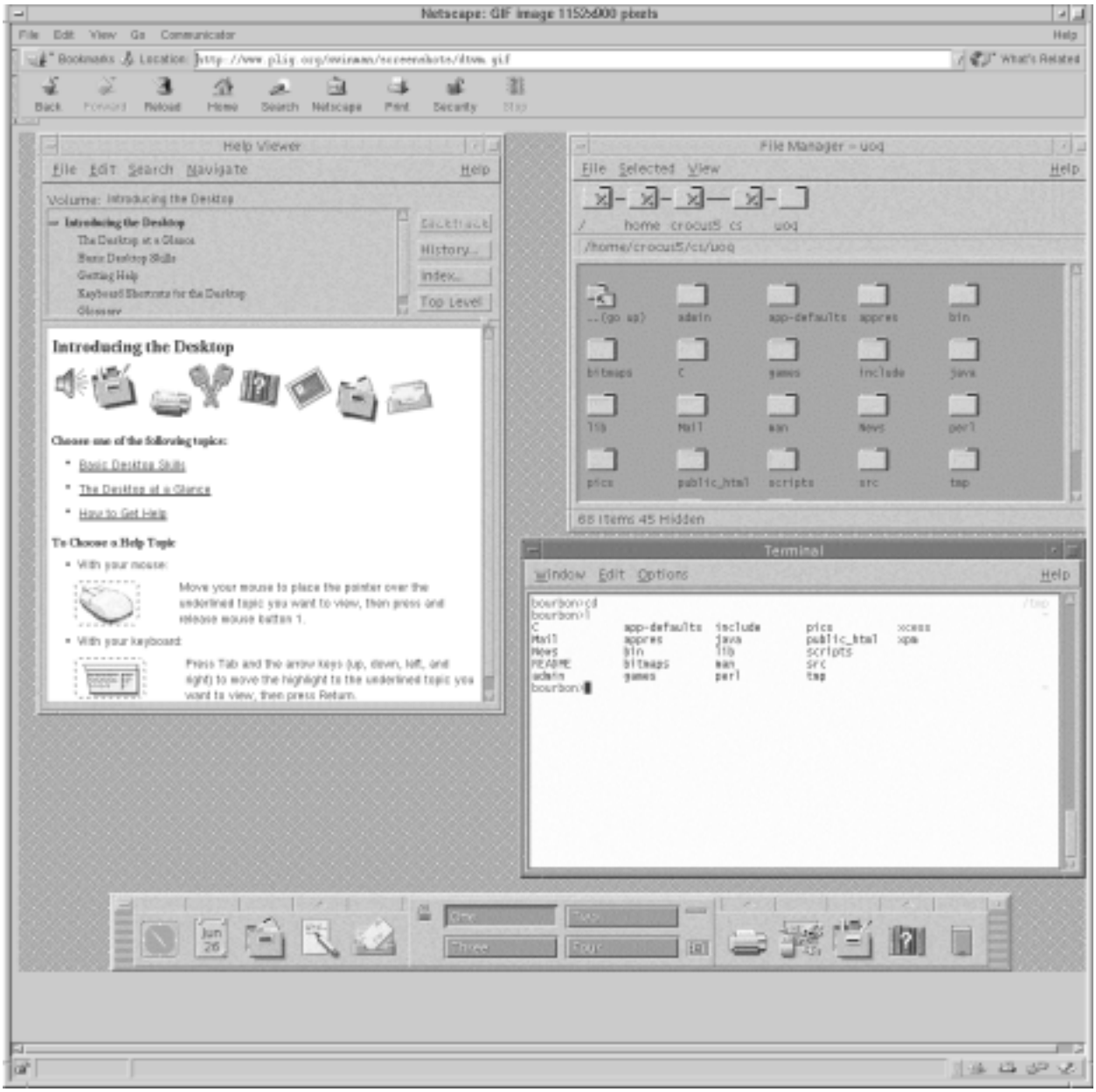

Figure 4.12.1-1. Example of CDE Window Manager Support Features

The Front Panel window at the lower part of the screen contains a set of icons allowing access to common support features. Through this panel the user can obtain time, date, monitor schedule, access email, edit text files, print, access file manager to navigate the file system, and application manager to invoke and manage custom applications.

The Help Viewer window to the left of the screen is a support feature the user can invoke to obtain detailed online explanation of CDE support capabilities.

The File Manager window at the upper right of the screen supports navigating the file system and creating, deleting, and moving file objects.

The Terminal window below the File Manager on the screen allows Unix command line access to operating system services.

In addition to the help accessible to the online user, detailed documentation of CDE capabilities from the user standpoint and the system administrator are available from the Sun vendor at the web location:

http://docs.sun.com/ab2/coll.8.40/@Ab2CollToc.

4.12.1.3 Required Operating Environment

Refer to the Solaris Common Desktop Environment: Advanced User's and System Administrator's Guide available at the Sun vendor's documentation link.

4.12.1.4 Databases

Not applicable

4.12.1.5 Special Constraints

Access to CDE is available only to registered users of ECS sites.

4.12.1.6 Outputs

Not applicable

4.12.1.7 Event and Error Messages

CDE issues both status and error messages to the operator screen. Error messages are listed in the CDE support documentation accessible at the web link:

http://docs.sun.com/ab2/coll.8.40/@Ab2CollToc.

4.12.1.8 Reports

None

This page intentionally left blank.

4.12.2 Microsoft Office

ECS provides office automation tools at the DAACs which are hosted on SSI&T workstations and on the MSS Server. These workstations have the capability to run the Microsoft Office suite of office automation tools via SunSelect's Windows Application Binary Interface, (**WABI**) middleware that allows Microsoft Windows-based applications to be run in a window on UNIX-based workstations.

The Microsoft Office Standard (version 4.3) software package contains office automation tool packages used to perform the following operator functions listed in Table 4.12.2-1.

Table 4.12.2-1. Common ECS Operator Functions Performed with Microsoft Office

Operating Function	GUI Program	Description	When and Why to Use
Word processing	Microsoft Word 6.0	allows operator to create, edit, open, save, and print documents. allows incorporation of material generated in Excel and PowerPoint.	to create and maintain DAAC policies and procedures
Develop a spreadsheet	Microsoft Excel 5.0	allows operator to manage, format, chart and analyze data imported from the MSS database.	imports data from the MSS database to create a report on an as needed basis
Develop a presentation	PowerPoint 4.0	allows operator to produce presentation slides, drawings, handouts, speaker notes, outlines and graphs. allows incorporation of material generated in Excel and Word.	to develop briefings on an as needed basis

4.12.2.1 Quick Start Using Microsoft Office

Microsoft's Program Manager contains the Microsoft Office icon which can be selected to provide Excel, Word, PowerPoint icons that launch the applications. Refer to the following Microsoft documentation for more detail about its applications:

- *Microsoft Word User's Guide*
- *Microsoft Excel User's Guide*
- *Microsoft PowerPoint User's Guide*

The documentation of Microsoft Office, used as a basis and referenced in this section, is for version 4.3 for Windows 3.11.

Microsoft Office is installed on both workstations and PCs. The method of invoking Microsoft Office is nearly identical for the two; however, an additional step (invoking **WABI**) is required for invoking MS Office on a workstation. **WABI** is invoked from the command line, while the actual invocation of MS Office (or the individual MS Office components) is via the **WABI** GUI.

The **WABI** software used to support Microsoft Office in the Unix environment is part of the SUN support software. When **WABI** is executed it displays a GUI "Program Manager" similar to the Windows 3.11 **Program Manager** (see Figure 4.12.2-1).

The version of Microsoft Office installed in **WABI** for ECS Release 4 is Office 4.3 for Windows 3.1.1 ®. This version includes the following Office product releases:

- MS WORD Release 6.0
- MS EXCEL Release 5.0
- MS PowerPoint Release 4.0

Note that Microsoft Office can also be launched from a SSI&T Manager pull-down menu (see Section 4.5.1 "SSI&T Manager").

4.12.2.1.1 Invoking Microsoft Office From the Command Line Interface

On a workstation, **WABI** must be invoked from the command line before Microsoft Office can be invoked. Once **WABI** has started, Microsoft Office products may be invoked by selecting icons from the **WABI** GUI titled "Program Manager".

To execute **WABI** from the command line prompt use:

WABI

This GUI emulates the behavior of Windows 3.11 ® and the Microsoft Office product icons may be selected as if the operator was using a PC instead of an Xterm.

On a PC running Window 3.11 ® the Microsoft Office products will have a selection Group containing the individual product icons similar to the panel displayed in Figure 4.12.2-2.

On a PC running Windows 95 ® the Microsoft Office products can be selected from the right margin tool bar (if present) or the "Start" menu. The "Start" menu may contain an entry for "Microsoft Office" with the individual products listed in a submenu was well as the individual products listed separately in the menu.

4.12.2.2 Microsoft Office Main Screen (WABI "Program Manager")

In response to invoking **WABI** on the command line the **WABI "**Program Manager**"** window is displayed. This window is shown in Figure 4.12.2-1 below.

The Microsoft Office products are displayed in a panel on the upper left corner,

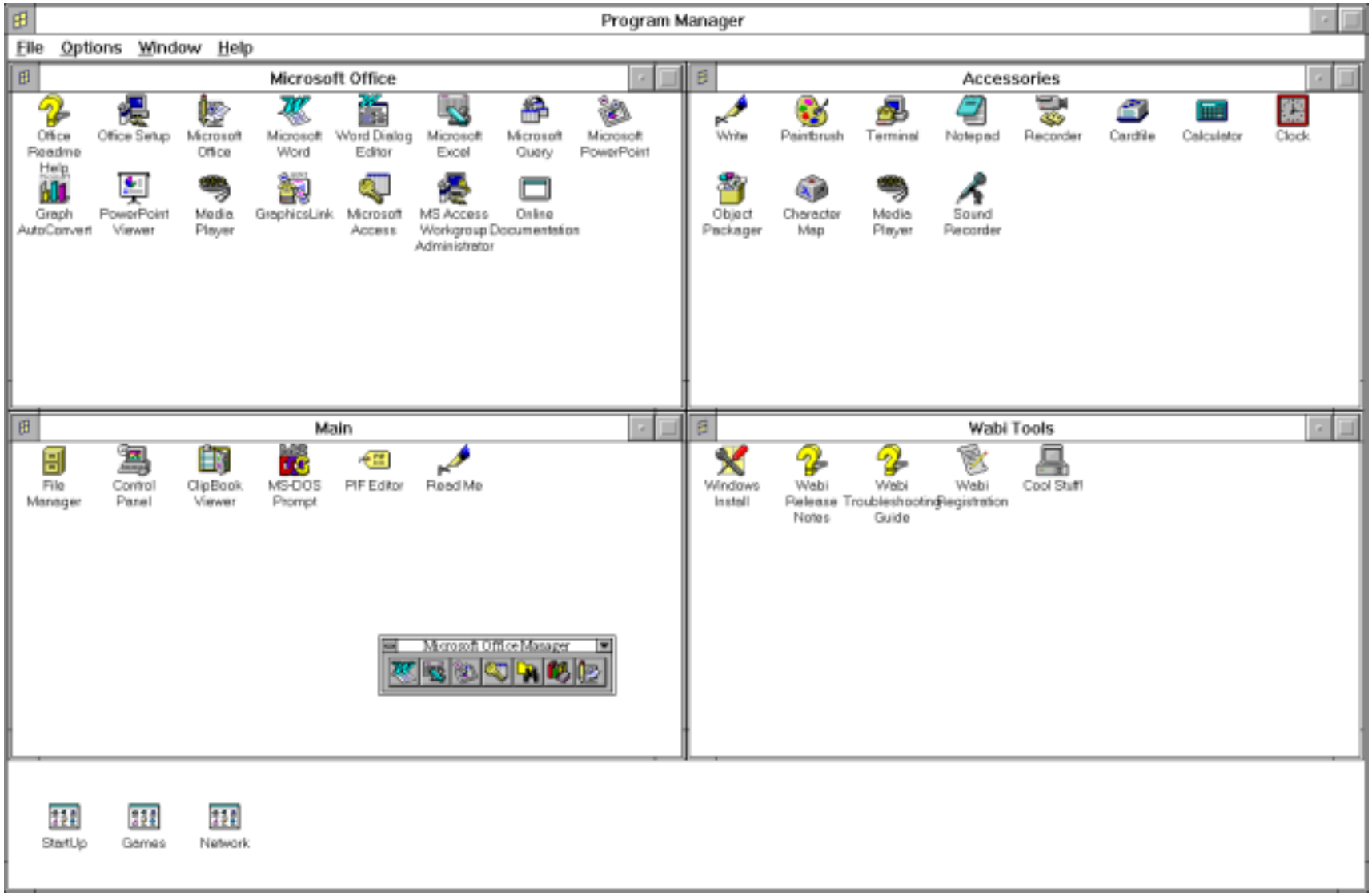

Figure 4.12.2-1. Microsoft Office Main Screen (WABI Program Manager)

The Microsoft Office Products are displayed on the panel shown in Figure 4.12.2-2. The individual products (MS Word, MS EXCEL, MS PowerPoint, etc) can be invoked by double-clicking on the appropriate icon in the panel display. The product name is given below the icon picture and is part of the icon.

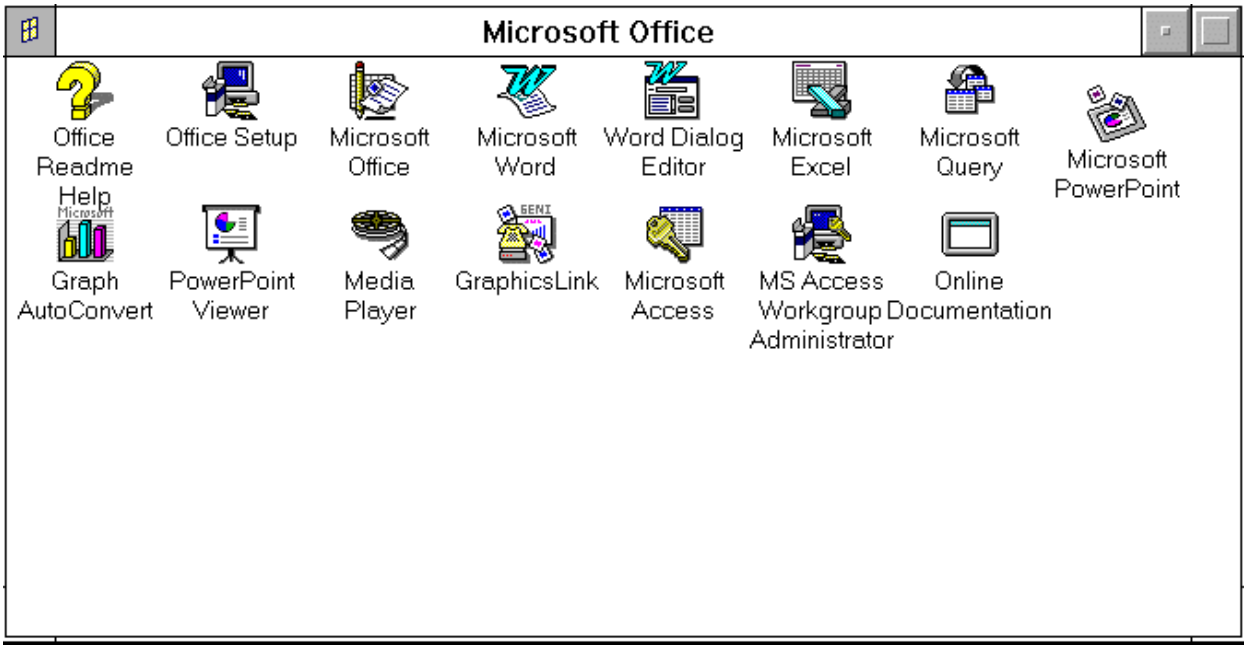

Figure 4.12.2-2. Microsoft Office Panel on Microsoft Office Main Screen

Alternatively, the standard Microsoft Office Tool Bar is provided on the **WABI** Program Manager screen (see Figure 4.12.2-1 on the lower section of the screen in the **Main** panel.). The Tool Bar "floats" and may be moved anywhere on the Program Manager screen. The icons on the tool bar do not display the product names as those on the panel do. Products may be selected from the tool bar with a single click on the icon.

Figure 4.12.2-3. Microsoft Office Tool Bar on WABI Program Manager screen

The icons for the popular products Microsoft Word, Excel and PowerPoint used for selection are shown below:

4.12.2.2.1 Microsoft Office Word

The Microsoft Word main screen is invoked from the Microsoft Word icon.

Figure 4.12.2-4. Microsoft Word Icon

4.12.2.2.2 Microsoft Office Excel

The Microsoft Excel main screen is invoked from the Microsoft Excel icon.

Figure 4.12.2-5. Microsoft Excel Icon

4.12.2.2.3 Microsoft Office Power Point

The Microsoft PowerPoint main screen is invoked from the Microsoft PowerPoint icon.

Figure 4.12.2-6. Microsoft PowerPoint Icon

4.12.2.3 Required Operating Environment

The installed Microsoft Office requires **WABI** version 2.1 to run on the SUN workstation. **WABI** 2.1 is supported by Solaris 2.3, 2.4, and 2.5.

For all COTS packages, appropriate information on operating environments, tunable parameters, environment variables, and a list of vendor documentation can be found in a CM controlled document for each product. To find the documentation for Office, refer to the ECS Baseline Information System web page, URL http://cmdm.east.hitc.com/.

4.12.2.3.1 Interfaces and Data Types

The Microsoft Office applications Word, Excel and PowerPoint work alike and interface with each other as if they were a single program. In addition, Excel can interface with the MSS database to

import data into a spreadsheet format. **WABI** interfaces with UNIX to emulate a DOS windows environment.

4.12.2.4 Databases

The individual Microsoft Office products maintain their "products" in proprietary file structures:

MS Word = **.doc**

MS EXCEL = **.xls**

MS PowerPoint = **.ppt**

Each release of these products can accept output from previous releases of the same product, and generally, their competitor's products available at the time of their release. However, they may not be able to use the same file extension name structures created by a later release. See the Special Constraints Section 4.12.2.5 below.

4.12.2.5 Special Constraints

The version of Microsoft Office installed is Office 4.3 for Windows 3.1.1. Users must take care when importing files (.doc, .xls, and .ppt) that the files are not produced by a later version of these products.

Specifically, MS Word 6.0 is installed in the ECS Release 4. The generally available version of MS Word for PCs is 7.0. Frequently software products cannot interpret files produced from later versions of the same product. Thus if a document was created or modified on a PC with release 7.0 then moved back to the UNIX environment the release 6.0 version would not be able to OPEN the file. The products usually provide a "Save As" feature to produce output that is compatible with earlier versions of the product. Thus the operator at a PC would use the "Save As" File menu option and select "Word 6.0 for MS-DOS" in the "Save as Type" list of the dialog box presented.

4.12.2.6 Outputs

The Microsoft Office products display their "products" on screen and produce printed output appropriate to the product as described in Section 4.12.2. 8 Reports below.

In addition, Microsoft Office allows objects to be embedded or linked from its applications. For more information, see Chapter 28: Exchanging Information with Other Applications of the *Microsoft Word User's Guide*, Chapter 7: Using PowerPoint with Other Applications of the *Microsoft PowerPoint User's Guide*, and Part 9: Exchanging Data with Other Applications of the *Microsoft Excel User's Guide*.

The output from Office 4.3 products is acceptable for input to later Microsoft Office products.

4.12.2.7 Event and Error Messages

Microsoft Office provides help windows to identify and explain any Microsoft Office error messages.

4.12.2.8 Reports

MS Word displays documents on the screen which can be saved to disk in native (.doc) or a format compatible with other word processors. Documents can be sent to a printer or a file. For more information see Part 6: File Management , Part 8: Using Word with Other Applications, and Chapter 10: Document Templates of the *Microsoft Word User's Guide*.

The spreadsheets created using Microsoft Excel may be printed. Microsoft Excel provides means to capture parts of sheets and formatting features to produce printed versions of elaborate spreadsheets. For information on creating reports using Microsoft Excel, see Chapter 14: Essential Skills, "Creating and Printing Custom Reports" and Chapter 29: Using Solver to Analyze Multiple-Variable Problems, "Microsoft Excel Solver Solutions and Special Reports" of the *Microsoft Excel User's Guide.*

This page intentionally left blank.

4.12.3 Netscape Communicator

Netscape Communicator version 4.0.6 is a GUI interface for browsing the World Wide Web and for obtaining information from other sources. Some of the Netscape Communicator functions are:

- view/process text/html files as well as other MIME formats
- provide an interface to Telnet, Gopher, FTP, Email, and Newsgroups
- Read content of world-wide-webavailable bulletin boards

Netscape Communicator is used to perform the following operator functions listed in Table 4.12.3-1. Please refer to the *Netscape Communicator Help component* for additional information on functionality not explicitly mentioned here.

Table 4.12.3-1. Common ECS Operator Functions Performed with Netscape Communicator (1 of 2)

Operating Function	Command/Action	Description	When and Why to Use
View Web Pages	Main window	• Operator views pages written in HTML source code • These pages provide images, text, and form templates	To obtain information and to process user-interactive forms
Process Forms	Main window	• Forms are provided for operator input • Certain operations will require a password	Used to search or manipulate the existing database (functions add, delete, modify)
Read a message and attachments	Netscape Mail and Discussions window	Allows the operator to read messages received. If there are any file attachments, they can be also be read or processed if they are not text files.	To read a message and if applicable, read or process an attachment
Reply to a message	Compose Window	Allows the operator to send a message to the originator of the message received or to all recipients of the original message.	To send (reply) messages to the originator of a message or all recipients of the message with an option to include the original message in the reply

Table 4.12.3-1. Common ECS Operator Functions Performed with Netscape Communicator (2 of 2)

Operating Function	Command/Action	Description	When and Why to Use
Send a new message	Compose Window	Allows the operator to create and send a message. Text or binary files can be attached to the message.	To send a new message to one or more recipients with attached files.
Delete/undelete messages	Netscape Mail and Discussions window	Allows the operator to mark messages for deletion. The messages are permanently deleted when the Update option is selected or when quitting Messenger Mailbox. Messages can only be undeleted before Update is selected or before quitting Messenger Mailbox.	To delete messages and free disk storage space
Browse bulletin boards	Netscape Message Center window	Allows for exchange of information with users and scientists that share the same interest	To ask or provide information on the BB subject to a large community of users

4.12.3.1 Quick Start Using Communicator

For more information, the *Netscape Communicator* Help Component is available online (Open the "Help" pulldown menu from the Netscape Communicator main screen and select Help Contents. The main page with the contents of the Netscape Help will appear. The operator can select subjects he/she is interested in by following the available links. A hardcopy of the displayed text may be obtained by opening the "File" menu and selecting "Print...").

4.12.3.1.1 Command Line Interface

To execute Netscape Communicator from the command line prompt use:
> netscape &

4.12.3.2 Netscape Communicator Main Screen

Once invoked, Netscape Communicator displays the startup screen shown in Figure 4.12.3-1.

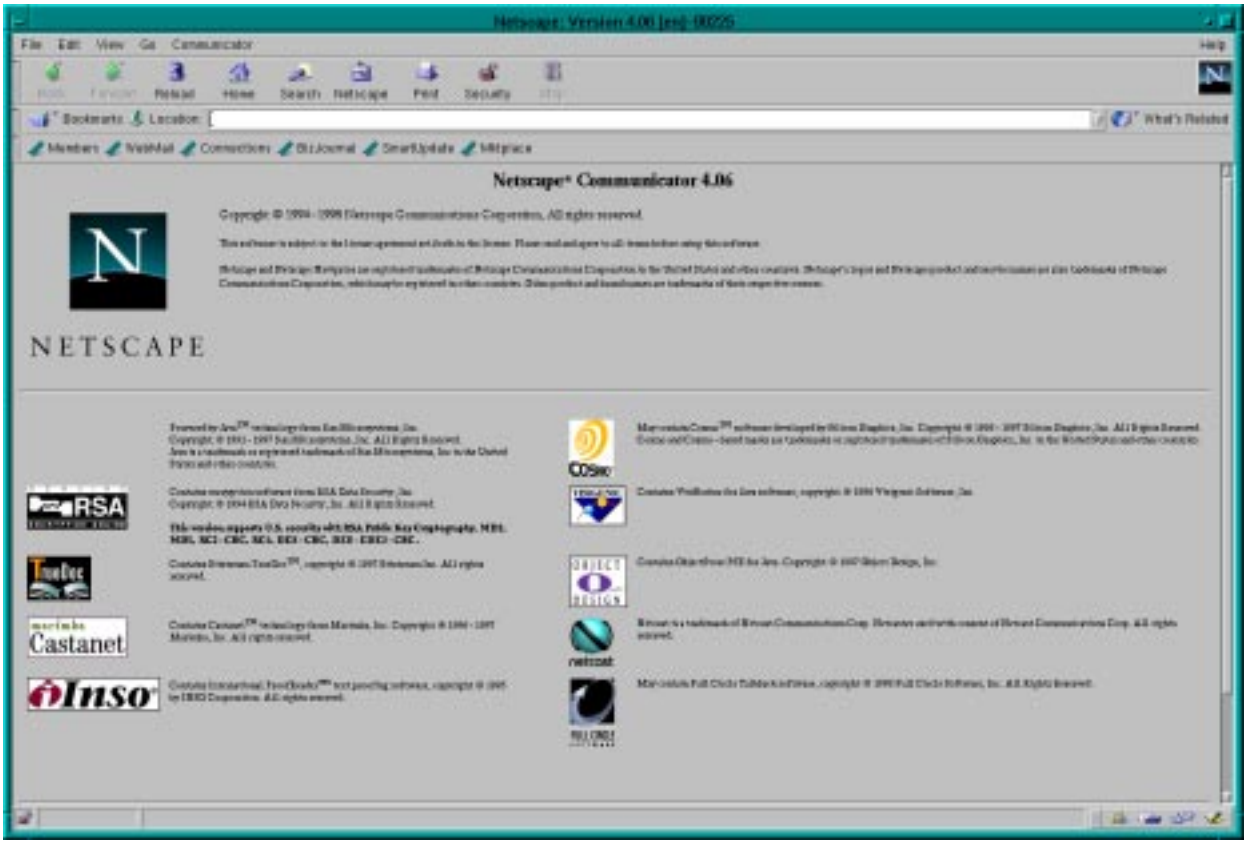

Figure 4.12.3-1. Netscape Communicator: Browser with Display Field

Clicking the mouse anywhere in the startup screen causes the browser to display the user's selected home page. An example of a home page is the ECS Data Handling System page shown in Figure 4.12.3-2.

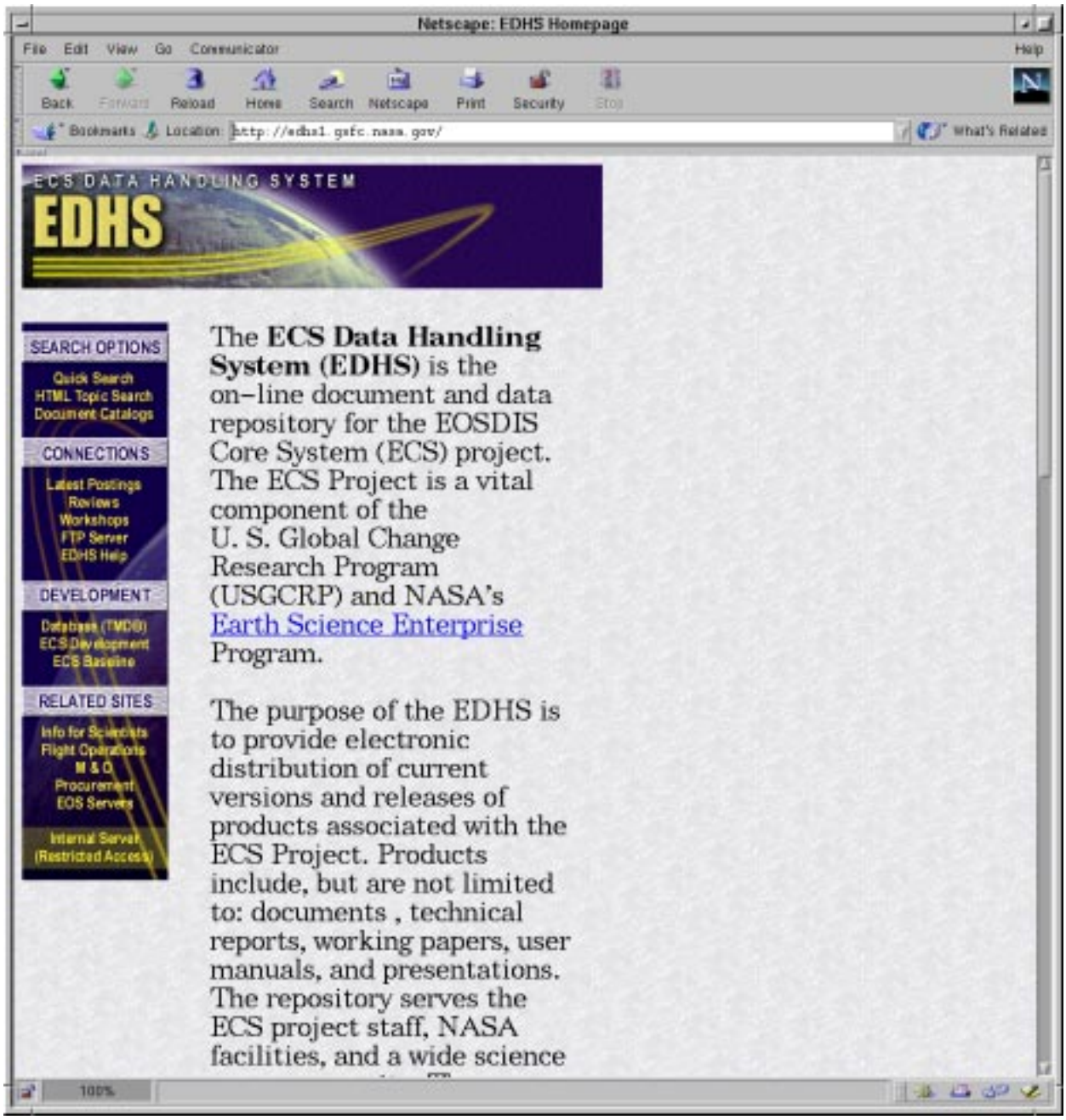

Figure 4.12.3-2. Netscape Communicator: EDHS Home Page

From the start-up Netscape Communicator screen, the operator has several choices for loading pages in any of the MIME formats known by Netscape Communicator:

- Move the cursor to a link in the display field and click on this link.

- Select a URL from the “Bookmarks” pulldown menu.
- Click on “File” and then “Open Page” of the Netscape Communicator Toolbar to enter a URL address or a file.
- In the “Location” text field beneath the Toolbar and Directory Buttons, type Ctrl+U (^U) to erase the line and type the desired URL.
- Modify a URL displayed in the “Location:” text area. Use the mouse to select the portion to be changed, press <Backspace> to delete the highlighted text, and enter the new text.

It is recommended that operators have bookmarks of pages that have to be accessed frequently (file bookmarks.html in the ~/.netscape directory). Refer to the *Netscape Communicator Handbook* for further details.

Buttons at the lower right corner of the screen provide direct access to functionality provided by, respectively, the browser, the mail message, the discussion group, and the composer windows.

4.12.3.3 Required Operating Environment

For all COTS packages, appropriate information on operating environments, tunable parameters, environment variables, and a list of vendor documentation can be found in a CM controlled document for each product. To find the documentation for Netscape, refer to the ECS Baseline Information System web page, URL http://cmdm.east.hitc.com/.

4.12.3.4 Databases

Netscape Communicator can interface with Sybase tables via cgi programs when operators process forms. Please refer to the appropriate sections for the databases used by ECS tools that are accessible via Netscape.

While these databases are not directly required for the operation of Netscape Communicator, some form processing features would be hampered if the interface to these databases does not work.

4.12.3.5 Special Constraints

None.

4.12.3.6 Outputs

Netscape Communicator provides the outputs listed in Table 4.12.3-2 below.

Table 4.12.3-2. Outputs

Output	Description and Format
Screen Display	Shows the Netscape Communicator browser GUI screen, adjusts to the screen format
Hardcopy of Display Window	Printed version of the contents of the display window
Display Window saved to disk	Contents of the display window can be saved to disk in Text, Source or Postscript format
Modified, deleted or created data files	Processing of forms allows the operator to modify, delete or create data files

4.12.3.7 Event and Error Messages

Netscape Communicator issues both status and error messages to document the status of loading a document or to display the reason for not loading a document. For further information, refer to the *Netscape Communicator Handbook.*

4.12.3.8 Reports

None

4.12.4 Netscape Enterprise Server

Version 3.6 of the Netscape Enterprise Server is shipped with Release 5 of ECS, as stated in the XRP II-based baseline of ECS.

The Netscape Enterprise Server by the Netscape Communications Corporations is used in ECS to administer and manage all of the custom world-wide web-based applications. An instance of the Netscape server is installed for each ECS application that relays on it and for each mode. For example, the interface server where both IOS and CLS applications run, there are six instances of the Netscape server - one for each of the three modes and one for each of the two subsystems. The port number to be used for each of these Netscape Enterprise Servers can be found in the XRP baseline.

The Enterprise Server COTS provides a great deal of functionality related to the web server administration, including:

- Administering the Server (i.e., performing common server administration tasks with the tool provide by the Netscape Server like Server Selector, and Server Manager)
- Programming the server (i.e., using CGI, Java, and writing CGI application)
- Monitoring the server (i.e., viewing the access and error log files and archiving log files)
- Configuring the system settings (i.e., shutting down the server, tuning server performance, and changing network settings)
- Indexing documents (i.e., creating collections of documents)
- Cataloging the server's content (i.e., running the catalog agent, browsing the server content)
- Provide Security and Encrypting transactions (i.e., setting security references, generating key files, and requesting and installing certificates)
- Managing server content and styles (i.e., specifying a document root, setting up virtual servers, using version control, and creating and using styles).

The Netscape Enterprise Server also allows the ECS operator to create and publish new web pages, through its Composer component.

Table 4.12.4-1 summarizes the most important functionality provided by the Netscape Enterprise Server. For a complete description of such functionality the reader is referred to the following more specific documentation:

Netscape Enterprise Server - Administrator's Guide for Unix

Netscape Enterprise Server - Programmer's Guide for Unix

Netscape LiveWire - Developer's Guide

Table 4.12.4-1 also provides a reference to the documentation that should be used to find information about specific tasks that can be accomplished with Netscape Enterprise Sever.

Table 4.12.4-1. Common ECS Operator Functions Performed with the Netscape Enterprise Server (1 of 4)

Operating Function	Command/Script	Description	When and Why to Use

Administering the server	See Administrator's Guide, Chapter 3, "Configuring and Managing your server"	• Using the Server Selector for:
		  • Install a new server
		  • Remove a server
		  • Configure administration
		• Use the Server Manager for performing periodic maintenance like:
		  • changing server name
		  • changing port number
		  • adding, changing, removing users form the user database files
			• When the need arises to manage multiple servers
			• When the server needs reconfiguration

Programming the server	See Administrator's Guide, Chapter 8, "Using programs with your Server", and the Programmer's Guide, Chapter 2, "CGI Basic"	Using CGI programs and Java Applets, Java Servlets, and JSQL • Writing CGI Application • Writing Servlets • Writing Enterprise Java Beans • Multitier web database solutions	• To run server-side applications • To allow the server to run programs that can process HTML forms and other data coming from clients and send a response back to the client

Table 4.12.4-1. Common ECS Operator Functions Performed with the Netscape Enterprise Server (2 of 4)

Operating Function	Command/Script	Description	When and Why to Use
Monitoring the server	Administrator's Guide, Chapter 9, "Monitoring the server"	• Viewing access and error log files • Archiving log files • Monitoring the network with the Simple Network Management Protocol (SNMP)	• During troubleshooting when the operator needs to examine log containing information on the server activity. • When the operator needs new log and error files • To graphically visualize information about a managed device (e.g., device is up or down, number of particular error messages received)
Configuring the system settings	Administrator's Guide, Chapter 5, "Configuring System Settings"	• Shutting down/ Restarting the server • Tuning server performance • Changing network settings	• When a reload of configuration files is required • To configure the server's technical options, including: Number of processes spawn max/min number of threads • listen queue size • DNS usage • When maintenance on the server requires: • Changing server location (i.e., directory) • Changing the server user account • Changing the server name • Changing the server port number • Changing the server binding address

Table 4.12.4-1. Common ECS Operator Functions Performed with the Netscape Enterprise Server (3 of 4)

Operating Function	Command/Script	Description	When and Why to Use
Indexing Documents	Administrator's Guide, Chapter 10, "Creating a text search interface"	• To create and maintain an end-user text search interface that allows client to search the web site	• When a customization of a text search interface is appropriate for tailoring the interface to the user community needs.

Cataloging the server's content	Administrator's Guide, Chapter 11, "Cataloging your web site"	• To automatically generate web pages that list and categorize the HTML files in the web site	• When the operator needs to provide web user with easy access to the web content by:
			  • listing all the HTML document in the web sites
			  • generating HTML views of the web site content organized by title, classification, author, and last-modified date
			  • generating automatic directory information (i.e., resource description) for HTML document in the web site

Table 4.12.4-1. Common ECS Operator Functions Performed with the Netscape Enterprise Server (4 of 4)

Operating Function	Command/Script	Description	When and Why to Use

Providing Security and Encrypting transactions	Administrator's Guide, Chapter 7, "Encryption and SSL"	• Setting security preferences	• When turning on the Secure Sockets Layer for the server and defining the system-wide preferences, including:
			  • SSL version
			  • Client certificates
			  • Cipher (i.e., encryption algorithm)

		• Generating key files	• When the operators needs to generates the server's public and private key
		• Requesting and installing certificates	• Requesting a certificate from a Certification Authority and installing the received certificate
Managing server content	Administrator's Guide, Chapter 4, "Managing Server Content"	• Setting the primary document directory	• When the operator wants to be sure that not all data present on the server is accessible by all end-users
		• Customizing public information directory	• When users on the host machine are to be allowed to add web document without the direct intervention of the web administrator
		• Enabling remote file manipulation	• When access control must be provided to remote users
		• Using Version Control	• To provide check-in, check-out, and roll-back capability to groups of people working on the same set of documents

4.12.4.1 Quick Start Using Netscape Enterprise Server

The Netscape Enterprise Server is managed from a single interface - the Server Selector. The administration server must be running before the operator can configure any specific web server using the Server Manager.

4.12.4.1 Command Line Interface

The Administration Server can be started by executing the following steps:

cd $ECS_HOME/<mode>/COTS/ns-home
./start-admin

where

$ECS_HOME/<mode>/COTS/ns-home is the directory where the Enterprise Server was initially installed.

This will start the administration server using the port that was selected during installation.

To access the Server Selector and proceed to access the functionality discussed in section 4.12.4.1 use a web browser to enter the URL for the administration server:

http://<servername>.<ECSdomain>.<domain>:<portnumber>

The operator is then prompted for a username and a password. Once this information is entered the Netscape Server Selector web page appears as shown in figure 4.12.4.-1.

Note that the browser used for this task must be capable of supporting frames and JavaScript. Netscape. Navigator 3.0, included in the ECS baseline, is capable of supporting both frames and Java Script.

4.12.4.2 Netscape Enterprise Server Main Screen

The Netscape Server Selector shown in Figure 4.12.4-1 is the main screen that appears when the Netscape Enterprise Server is started.

The figure shows how several servers can be brought on or off. Additionally, three buttons are made available to the operator. The associated functionality includes the following:

- Install a new Netscape Enterprise Server
- Remove a server from the host machine
- Administer the server configuration

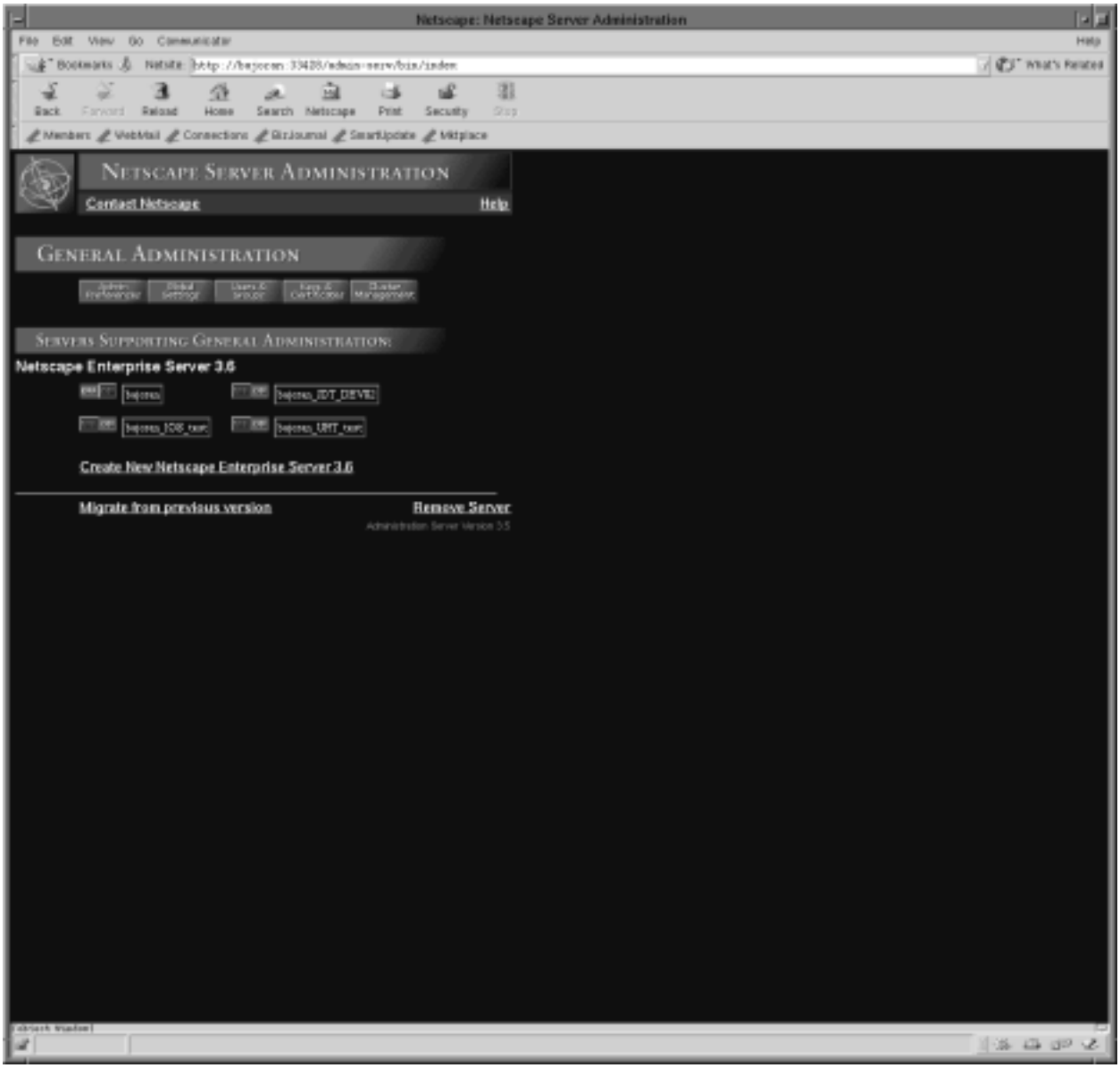

Figure 4.12.4-1. Netscape Server Selector Screen

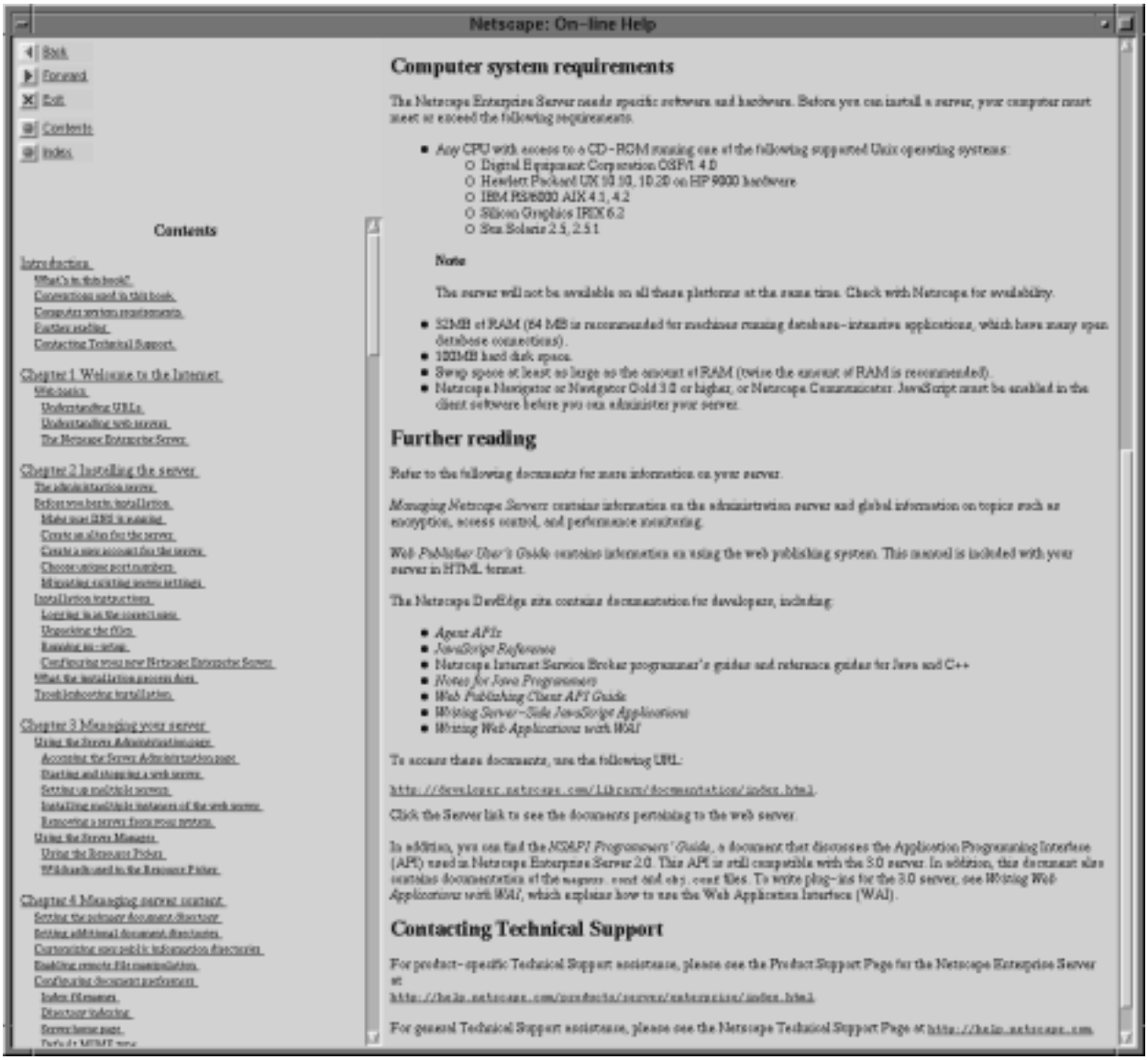

Figure 4.12.4-2. Netscape Server Admin Help

4.12.4.3 Required Operating Environment

The Netscape Enterprise Server is a COTS package. For all COTS packages, appropriate information on operating environment, tunable parameters, environment variables, and a list of vendor documentation can be found in a CM controlled document for each product. To find the documents for the Enterprise Server, please refer to the ECS Baseline Information System web page, at the following URL:

http://cmcd.east.hitc.com/.

Within the context of the proper functioning of this tool, it needs to be pointed out that during the installation of the CLS software a configuration file, named obj.conf, is generated that requires the server name as specified during the Netscape server configuration process. Thus, the operator installing the CLS software has to be made aware of the server name used during the Netscape server configuration.

4.12.4.4 Databases

The Enterprise Server uses a High-speed database called DBM that is mainly used for storing and administering the following information:

- User (i.e., adding, removing, listing, and editing profiles of users allowed (or denied) to access the resources available on the server)
- Groups (i.e., administering users by grouping features)
- Password (i.e., creating and changing passwords)

Refer to the *Administrator's Guide, chapter 6* for further information on the database used by the Enterprise Server.

4.12.4.5 Special Constraints

None

4.12.4.6 Outputs

The Enterprise Server allows for the real-time monitoring of the server activities. Several outputs are made available to the Operator to understand the way the server is handling the network traffic. The output data include:

- How much of the server resources are being used
- Percentage of threads being used totally
- Number of idle (i.e., awaiting connection) threads
- Number of threads dealing with reading requests
- Number of threads dealing with writing responses
- Number of threads dealing with resolving hostnames

Additionally, the monitoring of the server provides the output of the following server totals data:

- Bytes transferred
- Total requests
- Bad Requests

See the Administrator Guide, Chapter 9, “Monitoring the server” for further information.

4.12.4.7 Event and Error Messages

All errors encountered by the server are logged in an error log file.

This file contains also information about the major server events, such as when the server was started. Incorrect user authentication is also included in this file.

4.12.4.8 Reports

A log file called *access* is where all the main activities, regarding the server administrated by the Enterprise Server are logged. The operator can customize the *access* logging for each server resource by specifying whether to log accesses, who not to record accesses from, and whether the server should spend time looking up the domain names of the clients when they access a resource.

Format used for the *access* log is selectable by the operator and includes:

- Common Logfile Format
- Flexible log format
- User customizable format.

Refer to the Administration’s Guide, Chapter 9, “Monitoring the server” for additional information on the available reports from the Netscape Enterprise Server.

4.12.5 EOSView

EOSView is a custom HDF file verification tool. It displays the contents of HDF files and the contents of files containing HDF-EOS data. Individual objects can be selected for display. Displays include Raster images, datasets in tables, pseudo-color images of datasets, attributes, and annotations. Simple animation can be performed for a file with multiple raster images.

EOSView has a unique interface for handling HDF-EOS data structures. The Swath/Grid/Point interface uses only HDF-EOS library calls. The EOSView operator will not see the underlying HDF structures but will be prompted for which parts of the structure they wish to view.

EOSView is used to perform the operator functions listed in Table 4.12.5-1.

Table 4.12.5-1. Common ECS Operator Functions Performed by EOSView (1 of 2)

Operating Function	Command/Script or GUI	Description	When and Why to Use
Display HDF file contents	EOSView File Contents window	Looks at data file images, metadata, and auxiliary information	To verify structures put in a file
Display Raster Image	Image Display window	• displays Browse images, geolocated maps, etc • multiple zoom features in image display available • pan feature available • multiple palettes available	To view a snapshot of an image (not data)
Animate Raster Images	Animation Window	presents in order images as they appear in each file	To show a succession of movement (e.g., temperature adjustment from one image to the next)
Display of SDS data in table	• SDS data table • Vdata table	Displays a one or two dimensional list of data in a scrollable list	To view/compare associated numbers
Expand a Vgroup	Select “Vgroup” from File Contents window	Vgroups are logical groupings of information such as Vdata, SDS data, and images	To view information by a certain subject (e.g., the information associated with Geolocation)

Table 4.12.5-1. Common ECS Operator Functions Performed by EOSView (2 of 2)

Operating Function	Command/Script or GUI	Description	When and Why to Use
Pseudo-color display of SDS data	Image Display Window	Converts data into a visual image	To view the pseudo-color image of an SDS table
Display text objects	Text (Attributes) Window	Describes the types of data strings for an individual object or for an entire file	To look at factors when doing computations (e.g., longitude/latitude)
Hypertext help	On-line Help	On-line help is available from all menu bars	to help in the navigation and use of EOSView
Swath/Point/Grid interface (HDF-EOS)	File Contents Display window for swath, point and grid files	View HDF-EOS objects at a high level (i.e., data types cannot be broken down)	To view segments of data in terms of swath, a point on the earth, and grid (e.g., lat/long) data
Plot VData	EOSView Plot Window	Static line plot display of x and y data (from a Vdata Table)	To view line plot of data capabilities
Plot SDS Data	EOSview surface/contour plot window	Surface or contour plot of SDS	To view plots of SDS tables

4.12.5.1 Quick Start Using EOSView

EOSview can be started from the UNIX command line by typing the command:

>**EOSView**

EOSView can also be run by clicking on “Product Examination” from the SSI&T Manager Tools pulldown menu (see Section 4.5.1 “SSI&T Manager).

4.12.5.2 EOSView Main Screen

The EOSView Main Window shown in Figure 4.12.5-1 displays the current version of EOSView and date.

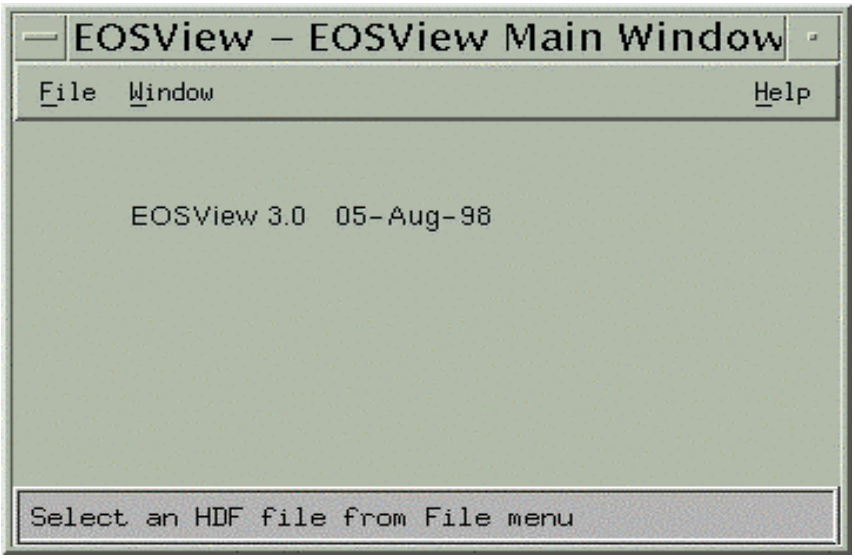

Figure 4.12.5-1. EOSView Main Screen

From the **File** pulldown menu, the operator can select Open or Exit.

- **Open** -- This will cause a file selection dialog to appear (shown in Figure 4.12.5-2)
- **Exit** – Exits EOSView

From the **Window** pulldown menu, the operator can select an EOSView screen and have the focus change to that window as long as it is currently open. This feature is described in Section 4.12.5.2.17.3 "Window Pulldown Menu."

From the **Help** pulldown menu, the operator can select help on context, on help, on window, keys, contents, index and version. This feature is described in Section 4.12.5.2.17.5 "Help Pulldown Menu."

4.12.5.2.1 EOSView File Selection Dialog

Selecting **Open** from the EOSView File pulldown menu will bring up the File Selection Dialog shown in Figure 4.12.5-2. This is a standard file selection dialog box that lets the operator search through directories and select an HDF file.

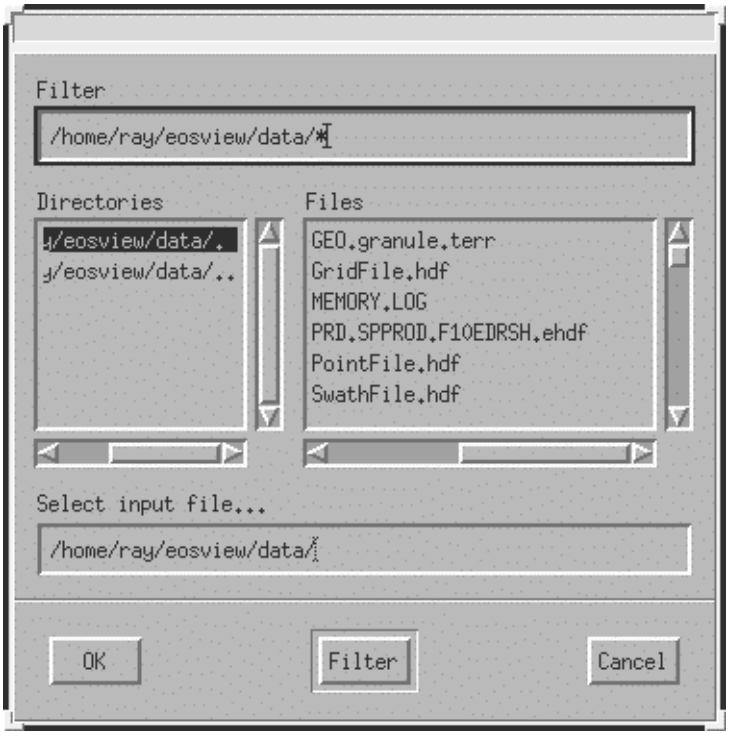

Figure 4.12.5-2. File Selection Dialog

Table 4.12.5-2 describes the File Selection fields.

Table 4.12.5-2. EOSView File Selection Field Description

Field Name	Data Type	Size	Entry	Description
Filter	system generated (editable)	unlimited	required	displays file selection parameters to filter the directories
Directories	selection	unlimited	required	displays a list of directories
Files	selection	unlimited	required	displays a list of files to select from
Select Input File	system generated (editable)	unlimited	required	displays the filename selection

In addition, the following pushbuttons are provided:

- **OK** – opens the specified file
- **Filter** – filters through the directories in layers until the desired directory/file is displayed
- **Cancel** – closes the file selection dialog

4.12.5.2.2 File Contents Display Popup

Once the HDF file has been selected, the File Contents Popup (see Figure 4.12.5-3) for that file will appear. This is a scrollable window with the following menu items:

- The **File** pulldown menu (described in Section 4.12.5.2.17.1) provides additional information about a file and provides a way to close the file.
- The **Options** pulldown menu (described in Section 4.12.5.2.17.2) and its Animate images selection becomes sensitized when the selected file contains multiple Raster Image Groups. This will cause all the images to be lined up and displayed in order in an EOSView - Animation Window.
- From the **Window** pulldown menu, the operator can select an EOSView window and have the focus change to that window as long as it is currently open. This feature is described in Section 4.12.5.2.17.3 "Window Pulldown Menu."
- From the **Attributes** pulldown menu (described in Section 4.12.5.2.17.4), the operator can view the global attributes for the selected HDF file.
- From the **Help** pulldown menu (described in Section 4.12.5.2.17.5), the operator can select help on context, on help, on window, keys, contents, index and version.

To select an HDF object simply double-click on the object that is displayed in the scrollable window. Objects can be Numeric Data, Vdata, Vgroup, Raster Images, or Grid/Swath/Point data. Each of these objects are described in the following sections.

4.12.5.2.3 Numeric Data Group

In this example, the GEO.granule.terr HDF file was selected from the File Selection Dialog, bringing up the File Contents Display Popup shown in Figure 4.12.5-3.

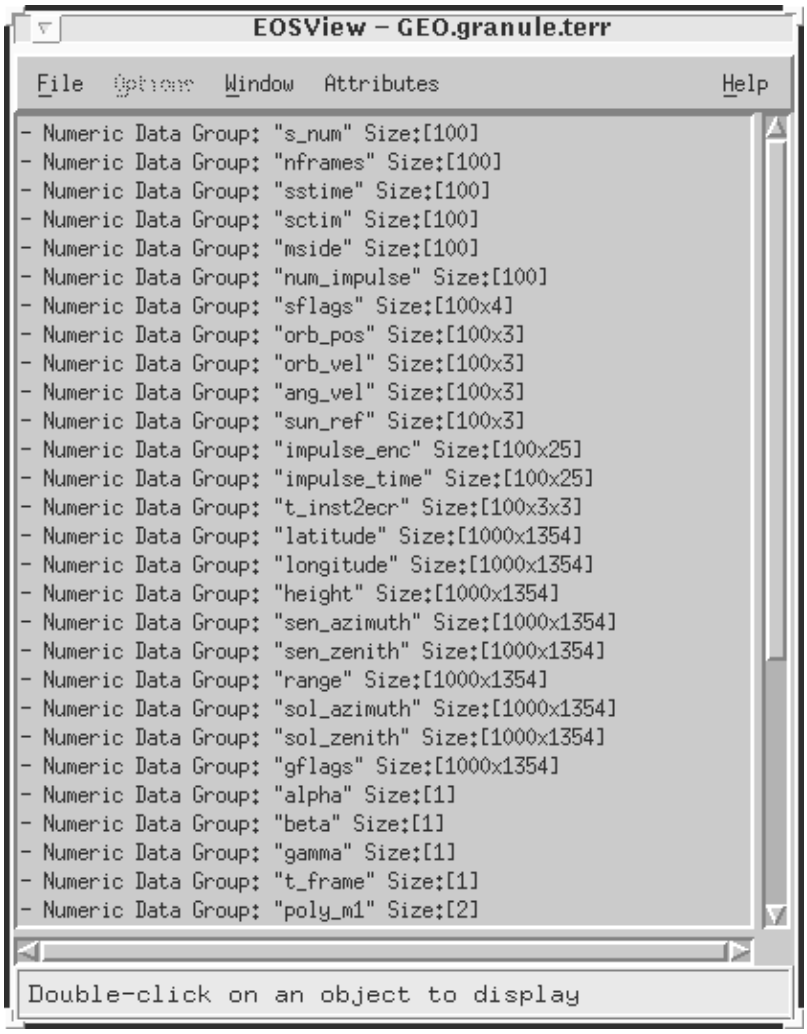

Figure 4.12.5-3. EOSView File Contents Popup

Double-clicking on an item from the EOSView File Contents Popup (in this example, Numeric Data Group: “sol_azimuth” Size : [1000X1354] was selected) brings up the Multi-Dimension SDS window as shown in Figure 4.12.5-4. This window allows the operator to select dimensions and indices for other dimensions.

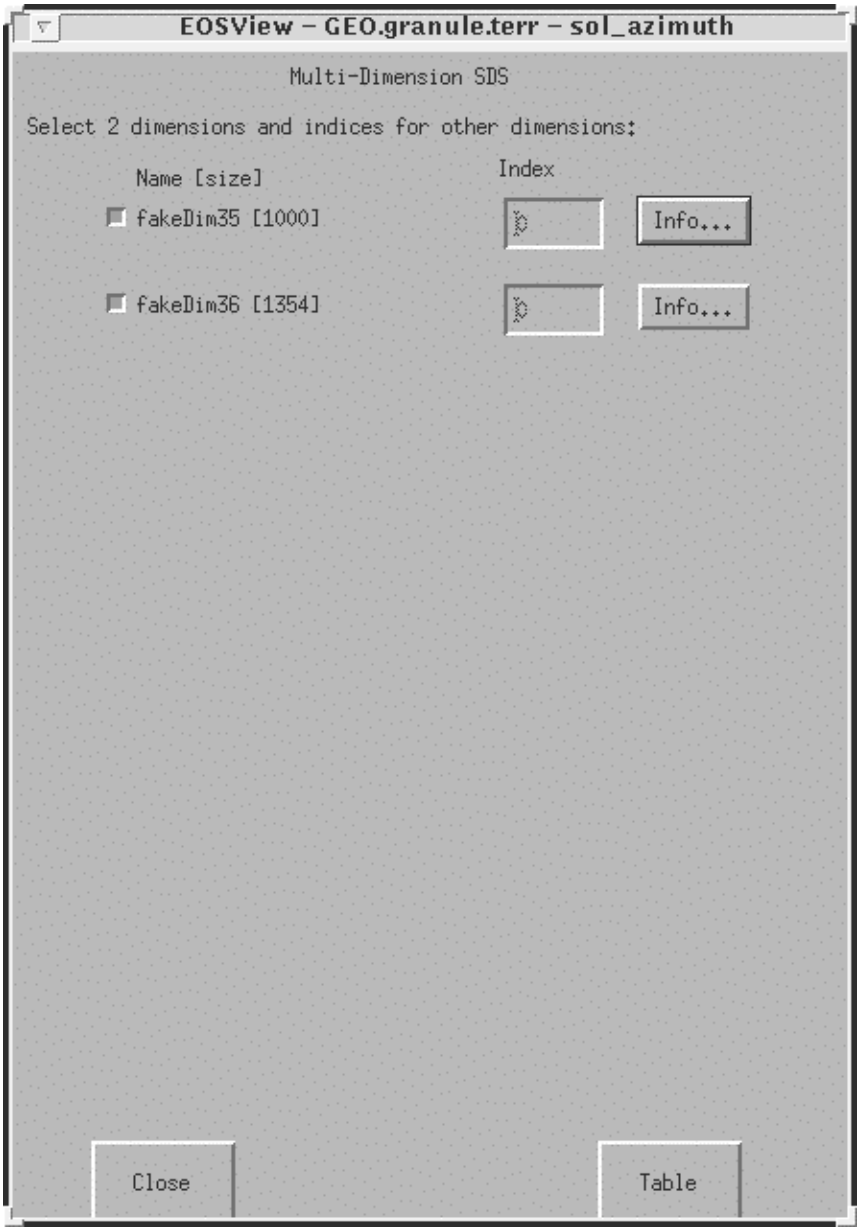

Figure 4.12.5-4. Multi-Dimension SDS Popup

Table 4.12.5-3 describes the fields of the Multi-Dimension SDS Popup.

Table 4.12.5-3. Multi Dimension SDS Field Description

Field Name	Data Type	Size	Entry	Description
Index	integer	N/A	Required	Index of involved dimensions. For the selected dimension the default value is 0. For the unselected dimension the number can be as large as what is in brackets after the dimension name.

EOSView can only display 2 dimensional datasets. If a dataset contains more than 2 dimensions, a 2-D slice of the dataset needs to be selected. This is accomplished by selecting ONLY 2 dimension boxes to the left of the dimension name. The other dimensions can have an index entered in the text box. Additional information for each dimension can be displayed in a separate window by pressing the button next to the dimension the information is desired. Clicking on the **Info** button will bring up a Dimension Information Popup shown in Figure 4.12.5-5.

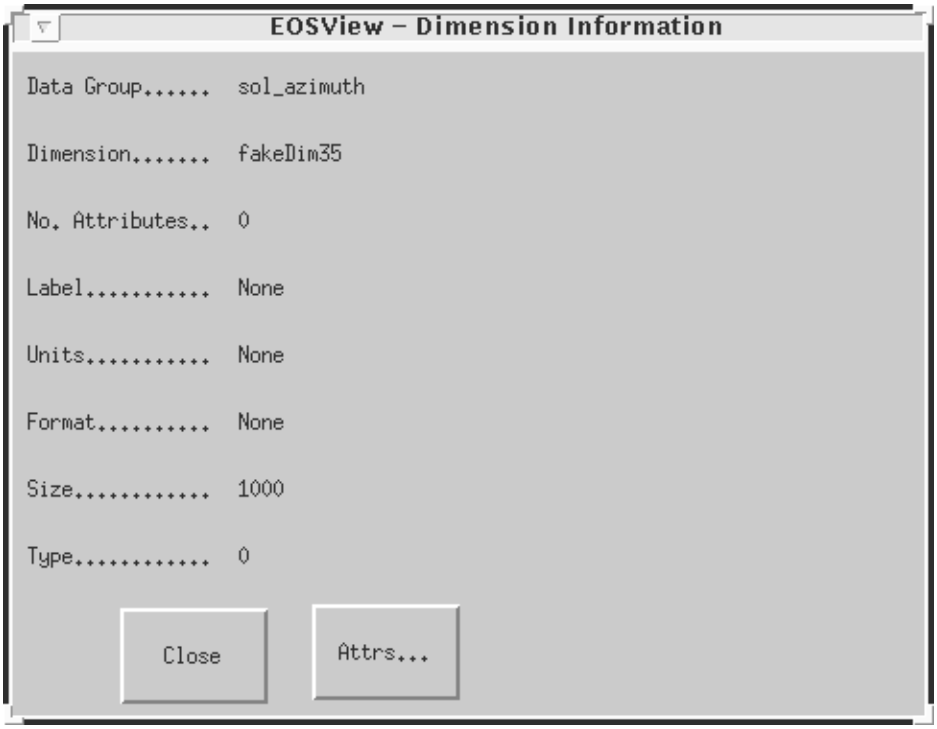

Figure 4.12.5-5. Dimension Information Popup

This window contains information such as number of attributes, units, format, size, etc. From this window, the operator can display textual output of the attributes for this dimension by clicking on the **Attrs…** button. Selecting **Close** closes the EOSView - Dimension Information Window.

Selecting the **Table** button from the Multi-Dimension SDS window brings up a table window as shown in Figure 4.12.5-6 . The table window will display a 1 or 2 dimensional list of the data as either a Scientific Data Group or Vdata. The window is sizable and contains horizontal and vertical scrollbars.

The **File** pulldown menu contains the following items, as shown in Figure 4.12.5-6:

- **Make Image** - This will create a pseudo-color image of the selected table. Selecting this option causes the Min/Max Values Popup to appear (Figure 4.12.5-10).

- **Plot** - if the table has been created from an SDS the operator has the option of converting the table to a surface or contour plot as shown in Figure 4.12.5-7.

- **Attributes** - This displays text attributes assigned to this table. Selecting this option will cause the Attributes Text Display Popup to appear as shown in Figure 4.12.5-33.

- **Statistics** - EOSView has basic statistical capabilities for table data. An SDS table will have the minimum, maximum and average for the entire table displayed in the EOSView - Stats window (see Figure 4.12.5.11). For a table created from Vdata data the same stats will be calculated for each column of data (field of Vdata). The EOSView stats window displays the name, min, max, and average values of a table. The name corresponds to the name of the SDS or Vdata filed name. The data is not editable and non-selectable. Hitting the “Ok” button will close the EOSView Stats Window.

- **Save** - This option allows the operator to save the table in either ASCII or binary format. Once the operator has selected ASCII or binary from the cascading menu the EOSView File Save is displayed (see Figure 4.12.5-12). This window is similar to the EOSView File Open Dialog. EOSView will only save tables to a new file, therefore, a unique file name must be entered in the “Save as:” text field.

- **Close Window** - Closes the table window.

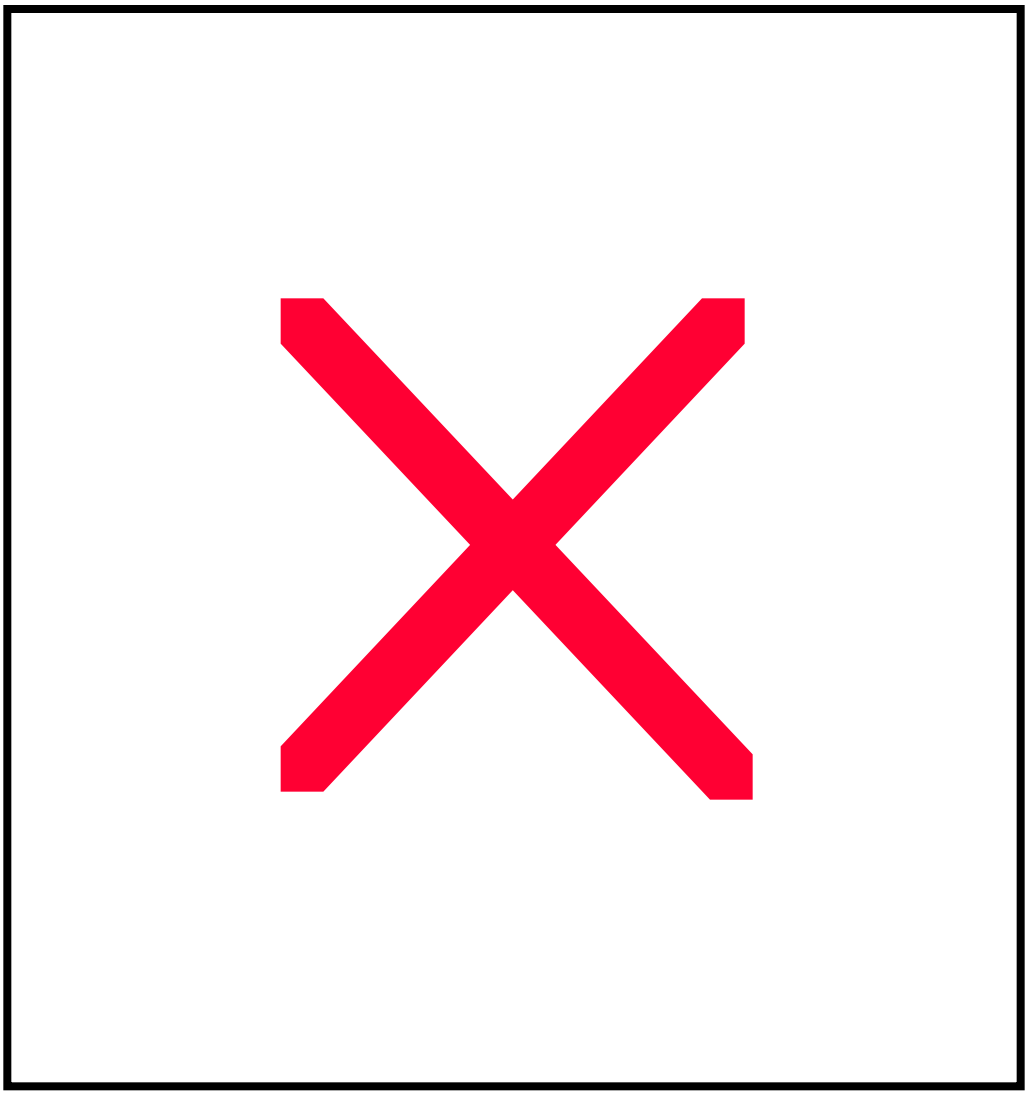

Figure 4.12.5-6. EOSView "sol_azimuth" Table Popup

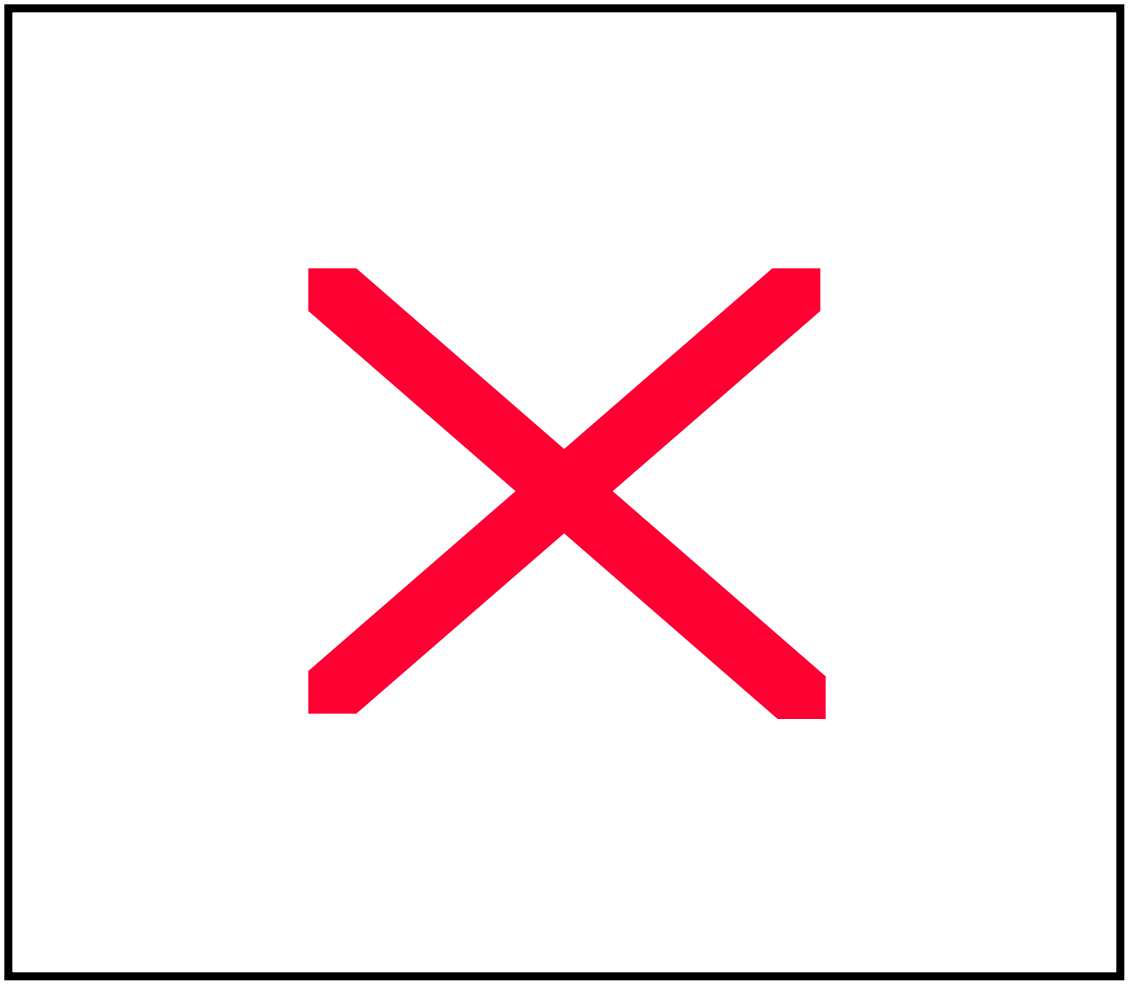

Figure 4.12.5-7. EOSView Contour Plot Popup

4.12.5.2.4 Surface/Contour Plot

The EOSView Contour/Surface Display will display a surface or contour plot of the selected Numeric Data Group. The window contains a menubar and can be resized.

- The **File** menubar option contains only one option. Selecting **Close** will close the surface/contour plot window.
- The **Plot Type** menubar options acts as a toggle between the surface and contour plots. If the current plot being displayed is a contour plot then the option listed will be **Surface Plot**. If the current plot being displayed is a surface plot then the option listed will be **Contour Plot**. Selecting this option will cause a new window to appear with the selected plot.

- The **Modify Plot Data** menubar option allows the user to modify the plots based on three criteria. The user may modify a plot by excluding a range of data, excluding up to three individual values, or plotting between a minimum and maximum value.
- The **Window** option lists, in a pull-down menu, all windows that are currently open. Opens any window selected. See Section 4.12.5.2.16 "Window Pulldown Menu."

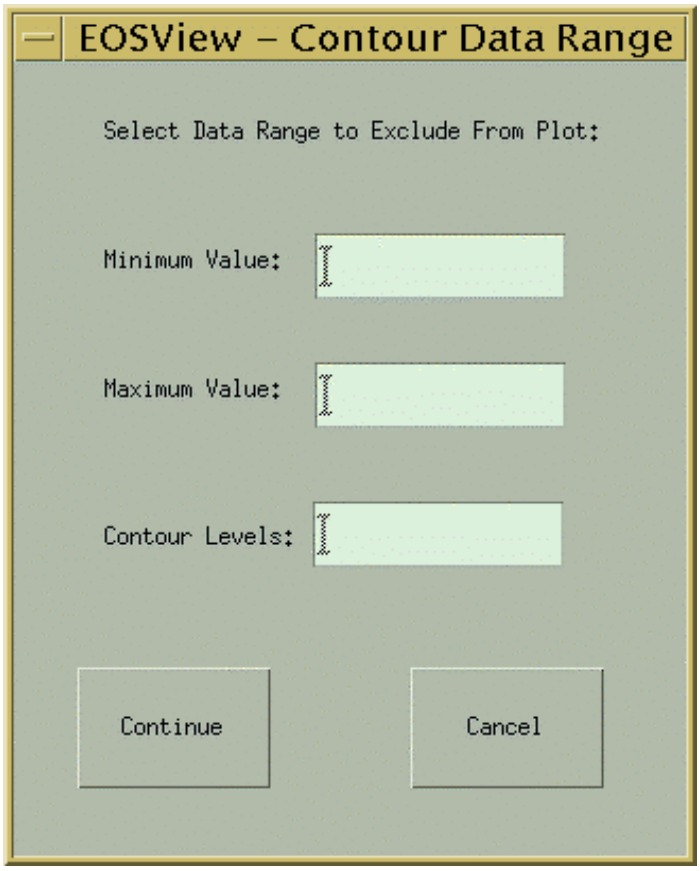

Figure 4.12.5-8. Contour/Surface Data Range Popup

The option **Data Range to Exclude** listed under the **Modify Plot Data** menubar option will cause the Contour/Surface Data Range window to appear (Figure 4.12.5-8). The user can select a range of data to exclude from the plot by entering the minimum value to exclude in the Minimum Value text field and the maximum value to exclude in the Maximum Value text field. The user can select the number of contour levels desired by entering the number in the Contour Levels text field. Entering data in the Contour Levels text field is optional. The Contour Levels text fields will only appear in the Data Range Popup if the plot was a contour plot. Pressing the **Continue** button will cause a new plot to be drawn without the data range entered. Pressing the **Cancel** button closes the window with no further action.

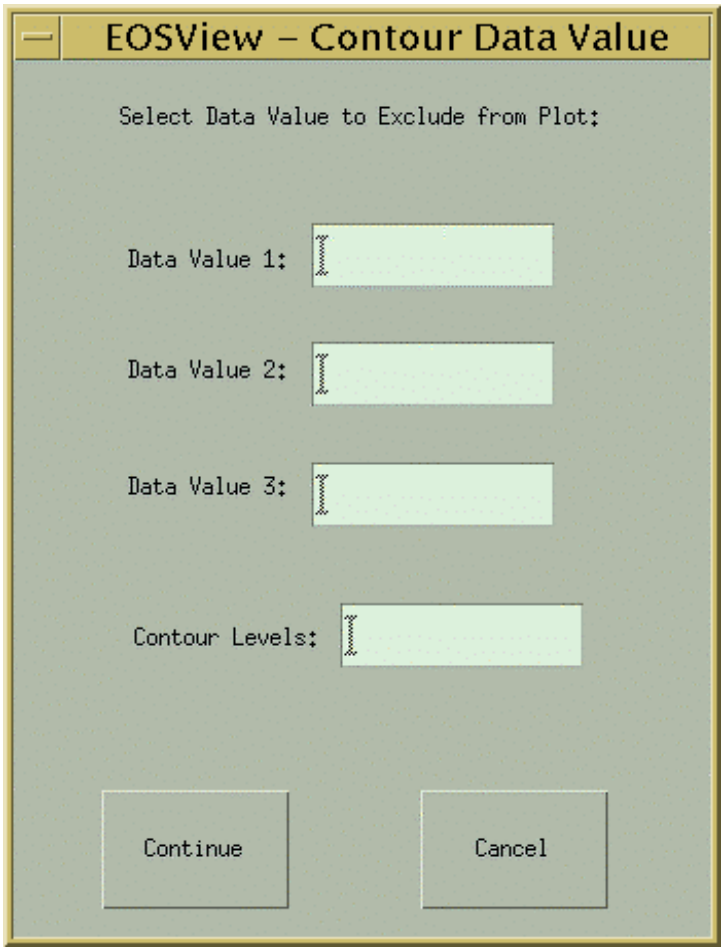

Figure 4.12.5-9. Contour/Surface Data Value Popup

The option **Data Value** listed under the **Modify Plot Data** menubar option will cause the Contour/Surface Data Value window to appear (Figure 4.12.5-9). The user can enter up to three values that will not be plotted. The first value should be entered in the Data Value 1 text field, the second value should be entered in the Data Value 2 text field, and the third value should be entered in the Data Value 3 text field. The user can select the number of contour levels desired by entering the number in the Contour Levels text field. Entering data in the Contour Levels text field is optional. The Contour Levels text fields will only appear in the Data Range Popup if the plot was a contour plot. Pressing the **Continue** button will cause a new plot to be drawn without the data range entered. Pressing the **Cancel** button closes the window with no further action.

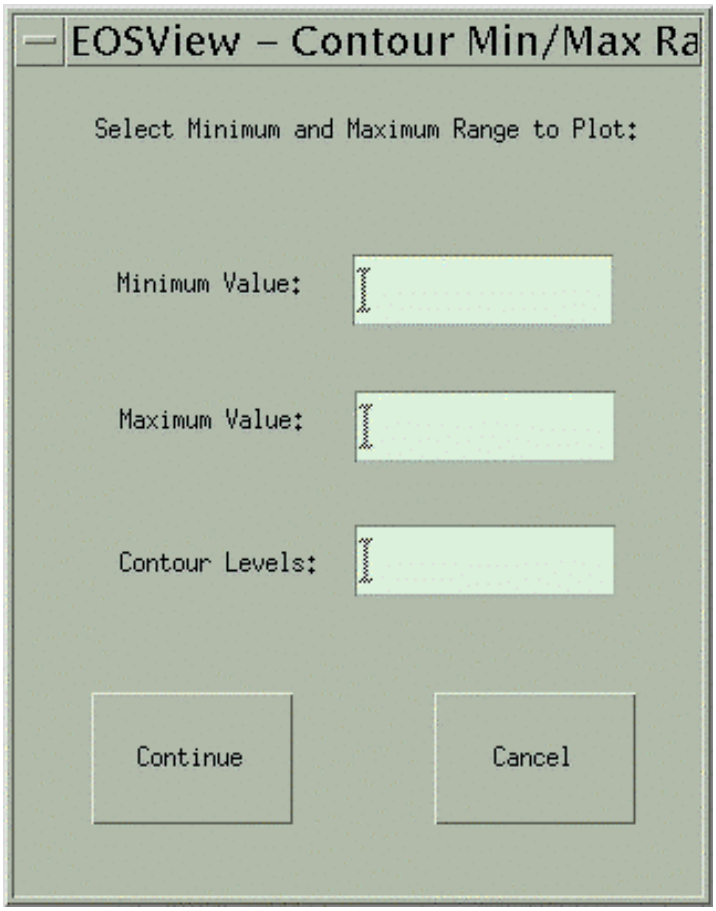

Figure 4.12.5-10. Contour/Surface Min/Max Range Popup

The option **Min - Max Range** listed under the **Modify Plot Data** menubar option will cause the Contour/Surface Min/Max Range window to appear (Figure 4.12.5-10). The user can enter a range of values that is desired to be plotted. All values less than the minimum value and greater than the maximum value will not be plotted. The minimum value to be plotted may be entered in the Minimum Value text field. The maximum value to be plotted may be entered in the Maximum Value text field. The user can select the number of contour levels desired by entering the number in the Contour Levels text field. Entering data in the Contour Levels text field is optional. The Contour Levels text fields will only appear in the Data Range Popup if the plot was a contour plot. Pressing the **Continue** button will cause a new plot to be drawn without the data range entered. Pressing the **Cancel** button closes the window with no further action.

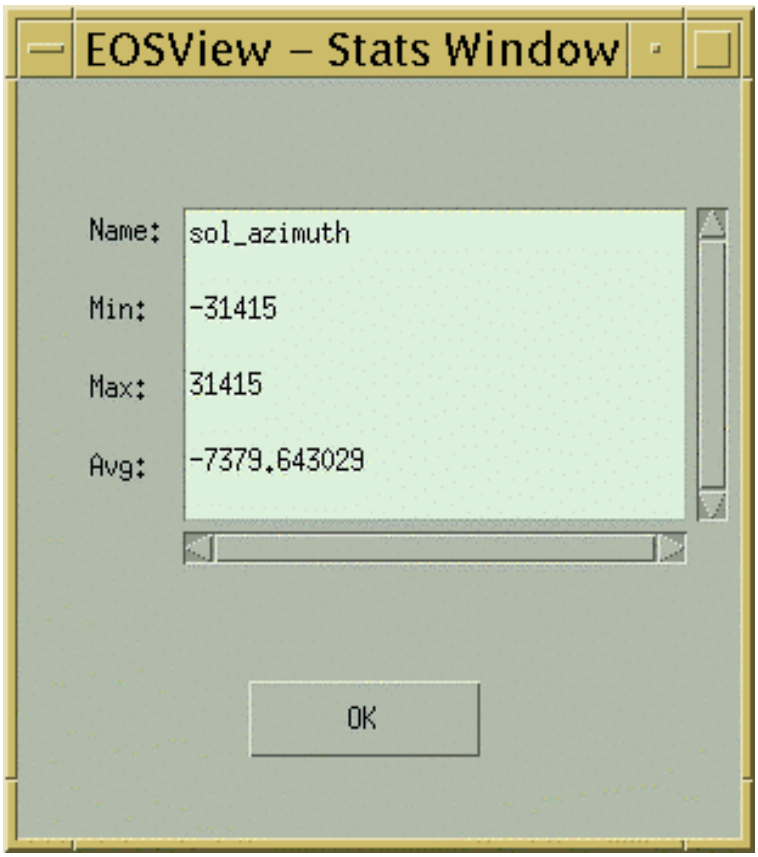

Figure 4.12.5-11. EOSView Stats Popup

The EOSView Statistics Popup window will list the minimum value, maximum value and average value in a table. For a table created from an SDS the values will be take from the entire table. For a table from a Vdata the values will be from each column. No statistics will be calculated for character data. To close this window press the **OK** button.

4.12.5.2.5 File Save Dialog

The user may save a table in EOSView in one of two ways. The table may be saved in either an ASCII format or it may be saved as a binary file. Selecting the save option will cause the File Save Dialog to appear. The user may then enter the name of the file that is desired to save the table into. EOSView will only save the table to a new file. The EOSView table save mechanism saves to the HDF ASCII Interchange Format (HAIF).

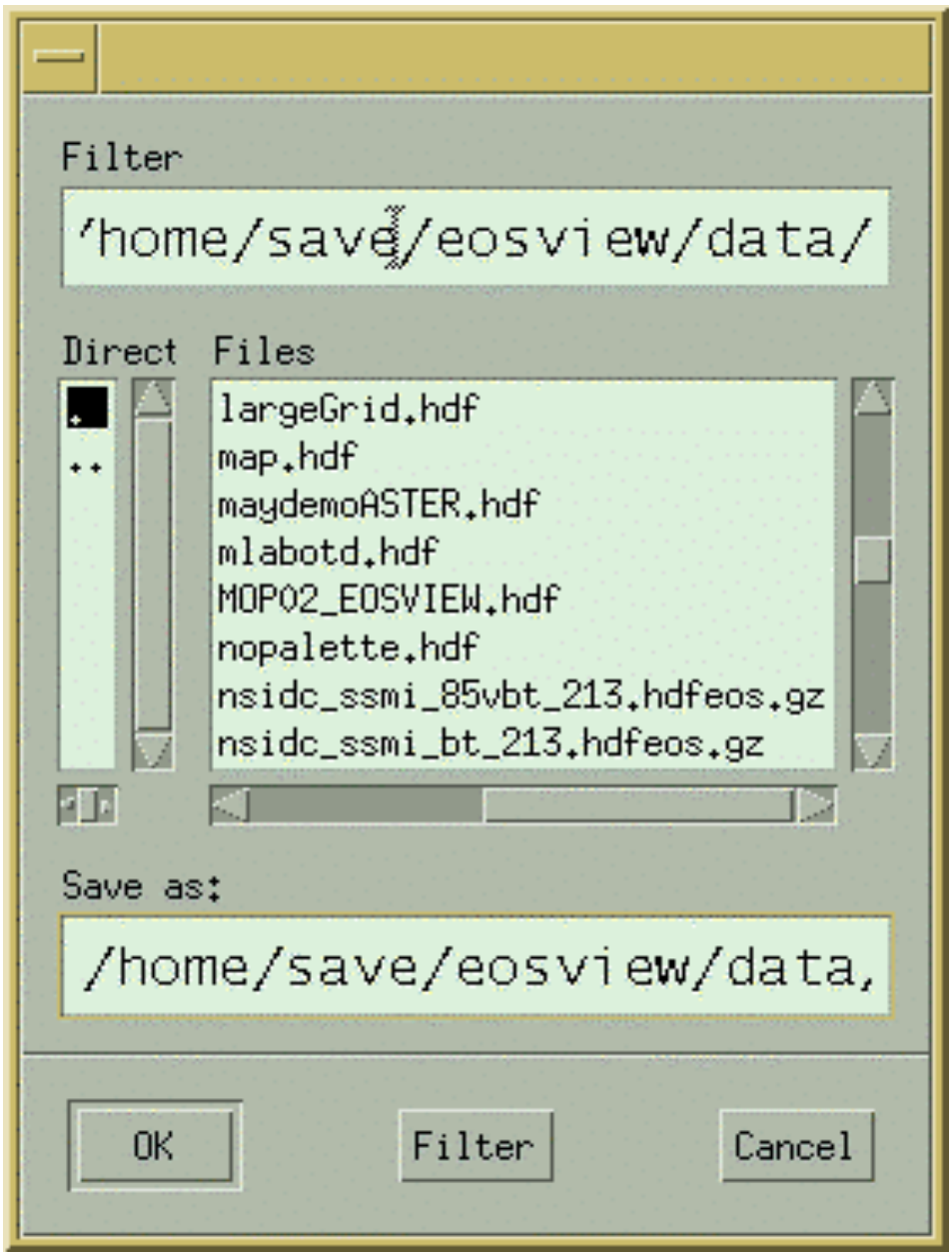

Figure 4.12.5-12. File Save Dialog

Table 4.12.5-4 describes the File Save fields.

Table 4.12.5-4. EOSView File Save Field Description

Field Name	Data Type	Size	Entry	Description
Filter	system generated (editable)	unlimited	required	displays file selection parameters to filter the directories
Directories	selection	unlimited	required	displays a list of directories
Files	selection	unlimited	required	displays a list of files
Save As	system generated (editable)	unlimited	required	displays the filename selection - user may enter to new filename in this field

In addition, the following pushbuttons are provided:

- **OK** – saves to the specified file
- **Filter** – filters through the directories in layers until the desired directory is displayed
- **Cancel** – closes the file save dialog

4.12.5.2.6 Make Image From Table Data

A pseudo-color image can be built from the data displayed in the Table. The image can be created by selecting **File - Make Image** from the menu bar of the EOSView - Table Popup. Selecting this option causes the Min/Max Values window to appear as shown in Figure 4.12.5-13. Table 4.12.5-5 describes the fields of the Min/Max Values Popup.

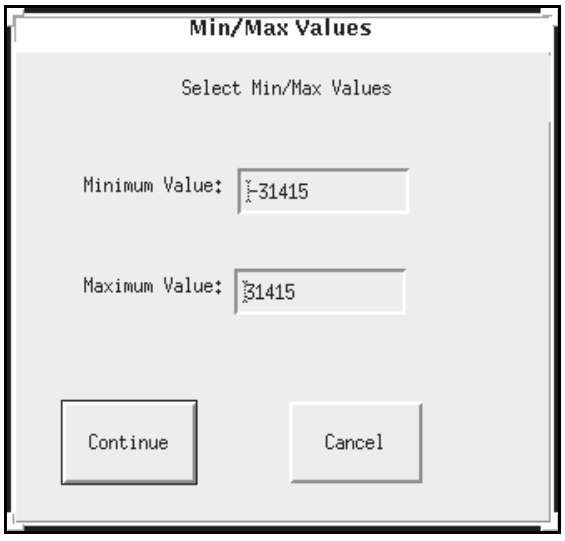

Figure 4.12.5-13. Min/Max Values Popup

Table 4.12.5-5. Min/Max Values Window Field Description

Field Name	Data Type	Size	Entry	Description
Minimum Value	integer or float (depending upon original data values)	N/A	required	Min value used for the image (field size is limited by the values that first appear when the window opens)
Maximum Value	Integer or float (depending upon original data values)	N/A	required	Max value used for the image (field size is limited by the values that first appear when the window opens)

From the Min/Max Values Window, the operator has the opportunity to enter the minimum and maximum values used for the image. Pressing the **Continue** button will cause the EOSView - Image Display Popup to appear (shown in Figure 4.12.5-14). The operator may cancel all actions by pressing the **Cancel** button.

Figure 4.12.5-14. "sol_azimuth" Image Display Popup

4.12.5.2.7 Image Display

The Image Display Popup has the following pulldown menu options: File, Palette, Zooming, Cursor, Window, and Help.

- Inside the **File**, the Overlay option is active only if the image has been created from a grid table. The Overlay option allows the operator to have lat/lon lines drawn over the image or the operator may have an icon displayed at the point on the grid image. See Section 4.12.5.2.8 which describes the EOSView lat/lon window for symbols and cursor positioning. Selecting Close option exits the Image Display Window.

- The **Palette** pulldown menu allows the operator to select colors from the following types of palettes for comparison: Default, Greyscale, Antarctica, Rainbow, and World Colors. The first palette option is "Default" which is the palette provided within the HDF file of the image being displayed; if no palette was provided, the default color map is used The second palette option is "Grayscale" which will be a black and white version of the image being displayed. The next three options are "Antarctica", "Rainbow" and "World Colors." These three palettes are provided as part of EOSView. Selecting one of these three palettes will cause the current image to use that palette. The “Use Entire Palette” option is not functional.

- The **Zooming** pulldown menu allows the operator to select from two zoom methods: Bilinear Interpolation and Nearest Neighbor. Bilinear Interpolation uses interpolation to calculate the probable color during an expansion/compression event; it gives a much smoother image during zooming. The second is Nearest Neighbor which uses sub-sampling or super sampling to determine probable color, e.g., two red pixels are now four red pixels during expansion.

- The **Cursor** options allows the operator to set the cursor at one of the positions. The first is “X-Y Position” . The Operator will be prompted for an X-Y location and the cursor will be positioned at that location. In EOSView, position 0,0 is the lower left corner (see Section 4.12.5.2.9, which describes the EOSView - x-y cursor window). If the image has been created from a grid table, the operator may enter a lat/lon position and the cursor will be positioned to that location. See Section 4.12.5.2.8 which describes the “EOSView - lat/lon window (used for symbols and cursor positioning). If the image has been created from a swath table the operator may position the cursor at the selected scan line. The cursor will be placed at the beginning of the scanline. See Section 4.12.5.2.10 which describes the EOSView Scanline Cursor Window.

- The **Window** option lists in a pull-down menu all windows which are currently open. Opens any window selected. See Section 4.12.5.2.17.3 “Window Pulldown Menu.”

- **Help** – see Section 4.12.5.2.17.5 “Help Pulldown Menu.”

The Image Display also has the following pushbuttons: Zoom In and Zoom Out. It also has a panning feature as described .

- **Zoom In** and **Zoom Out** pushbuttons -- pressing the Zoom In button will cause the image to be zoomed in and re-drawn in the image window. Pressing the Zoom Out button will cause the image to be zoomed out until it returns to original size. The zoom factor will be displayed in the bottom left corner of the EOSView - Image Display Window on the status bar.

- **Pan Window** -- If the operator has zoomed in on an image, the operator may pan around the image by holding down the left mouse button while the cursor is in the postage stamp size image and moving it around. The cursor will be outlined by a box which indicates the portion of the image being displayed in the full size image window.

The Image Display Popup also has cursor tracking capabilities for all non-grid created images. Placing the cursor on the image and holding the left mouse button will cause the cursor position (in x-y coordinates) to be displayed on the left side of the status bar. If the image has been created from a grid table the cursor position will be displayed in lat/lon coordinates on the left side of the status bar.

4.12.5.2.8 Lat/Lon Symbol Popup

The EOSView Lat/Lon symbol (cursor) Popup (Figure 4.12.5-15) allows the operator to enter the desired coordinate pair in one of two ways. Degrees-minutes-seconds (DMS radio button) allows the operator to type in the degrees (Deg), minutes (Min), and seconds (Sec) for the latitude and the longitude (the operator can switch between North (N)-South (S) and East(E)-West (W) by using the list buttons to the right of the text entry fields). The second method is by entering degrees (DEG radio button) in the degrees text fields. Also in this case the operator switch between North (N), South (S), and East(E), West (W) by using the list buttons to the right of the text entry fields. For both entry methods, hitting the “Ok” button will cause the cursor to be positioned or a symbol drawn at the desired location. Hitting the “Cancel” button will cancel the operation.

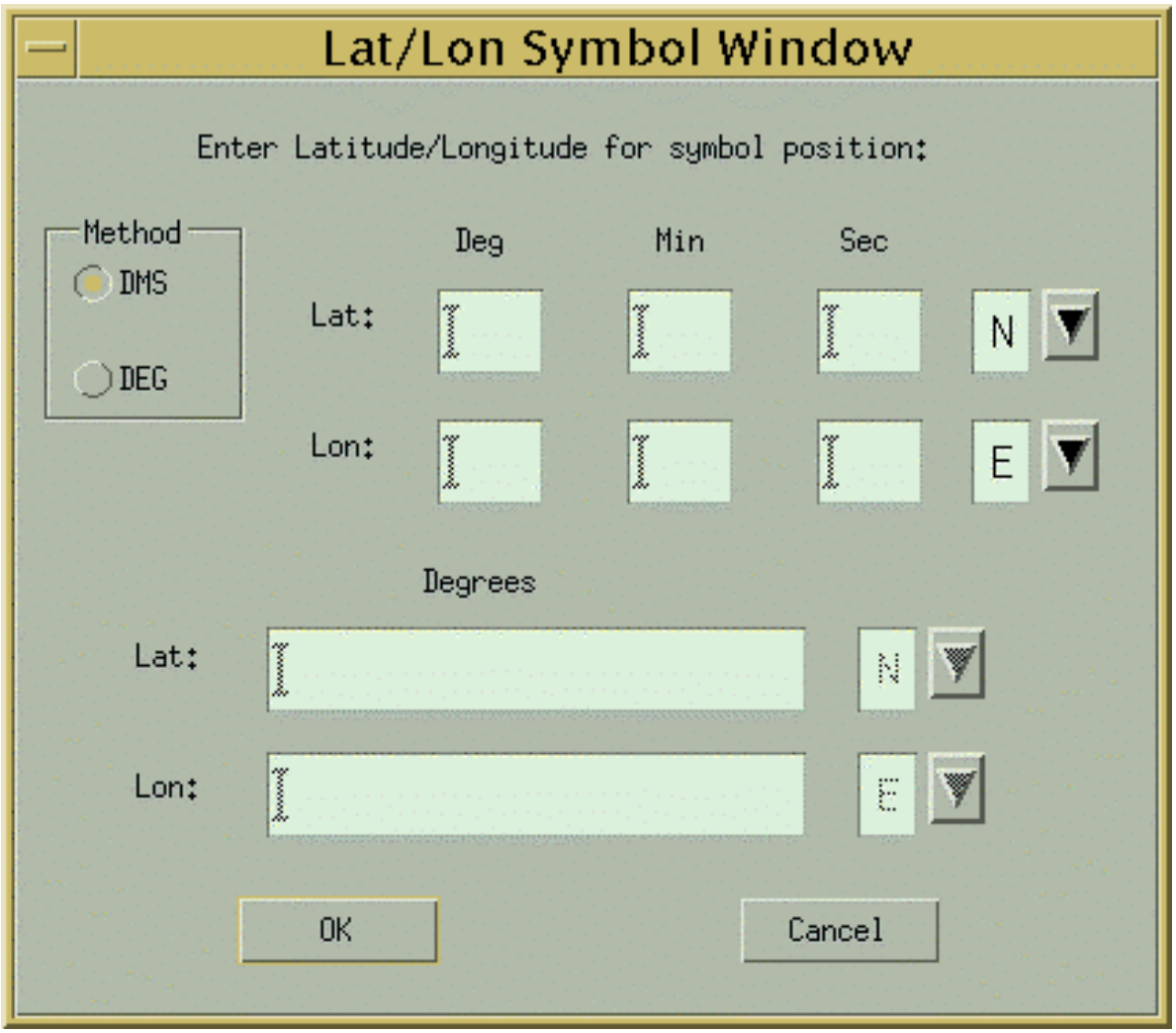

Figure 4.12.5-15. Lat/Lon Symbol Popup

Table 4.12.5-6 describes the parameters in the Lat/Lon Symbol Window.

Table 4.12.5-6. Lat/Lon Symbol Window Field Description

Field Name	Data Type	Size	Entry	Description
Lat (DMS)	float	N/A	required	Latitude (if DEG is selected)
Lon (DMS	float	N/A	required	Longitude (if DEG is selected)
Lat/Lon (Deg)	float	N/A	required	Degrees of Latitude/Longitude (if DMS is selected)
Lat/Lon(Min)	float	N/A	required	Minutes of Latitude/Longitude (if DMS is selected)
Lat/Lon(Sec)	float	N/A	required	Seconds of Latitude/Longitude (if DMS is selected)

4.12.5.2.9 X-Y Cursor Window

The operator may enter the X-Y coordinates to have the cursor positioned by using the EOSView X-Y cursor Popup shown in Figure 4.12.5-16. The operator may enter the desired X-Y location in the corresponding X-Y text field. The X-Y limits are placed to the right of the text fields. Hitting the "Ok" button will cause the cursor to be placed at the desired location in the image. Hitting the "Cancel" button will cancel the operation.

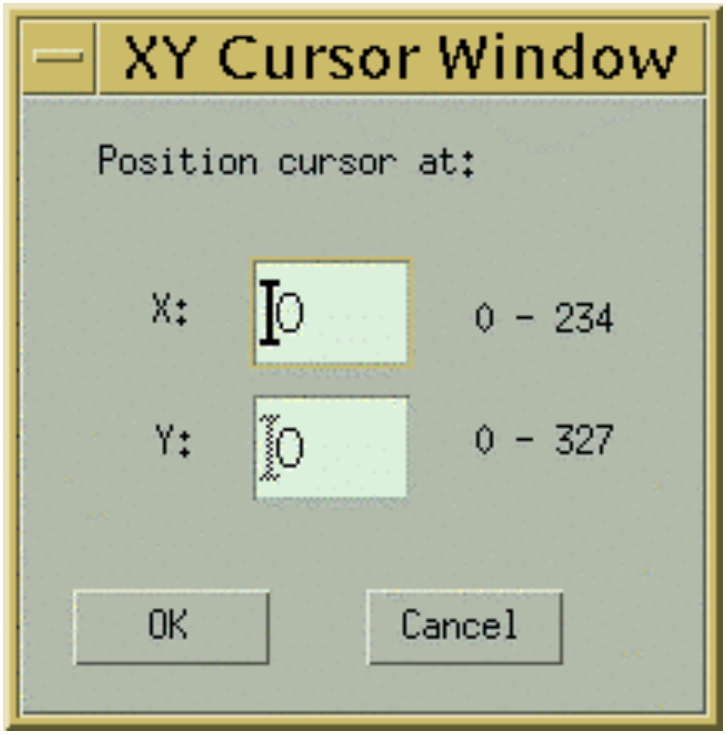

Figure 4.12.5-16. X-Y Cursor Popup

Table 4.12.5-7 describes the parameters in the X-Y Cursor Popup.

Table 4.12.5-7. X-Y Cursor Window Field Description

Field Name	Data Type	Size	Entry	Description
X:	integer	N/A	required	X horizontal coordinate (max accepted value is listed to the right of the text field)
Y:	integer	N/A	required	Y vertical coordinate (max accepted value is listed to the right of the text field)

4.12.5.2.10 ScanLine Cursor Window

If the image was created from a Swath table the operator may position the cursor to the beginning of the scanline by using the EOSView - ScanLine Cursor Popup shown in Figure 4.12.5-17. Moving the slider left and right will cause the scanline value below the slider to decrease and increase, respectively. Once the desired scanline is achieved, hitting the "Ok" button will cause the cursor to be placed at the beginning of the scanline. Hitting the "Cancel" button will cancel the operation.

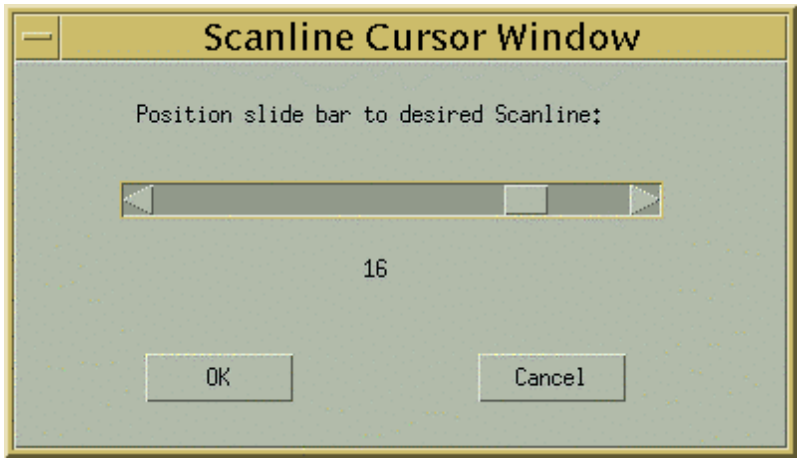

Figure 4.12.5-17. Scanline Cursor Popup

4.12.5.2.11 Vdata

In this example, the packVdata1.hdf file was selected from the File Selection dialog, bringing up the Vdata File Contents Popup (see Figure 4.12.5-18).

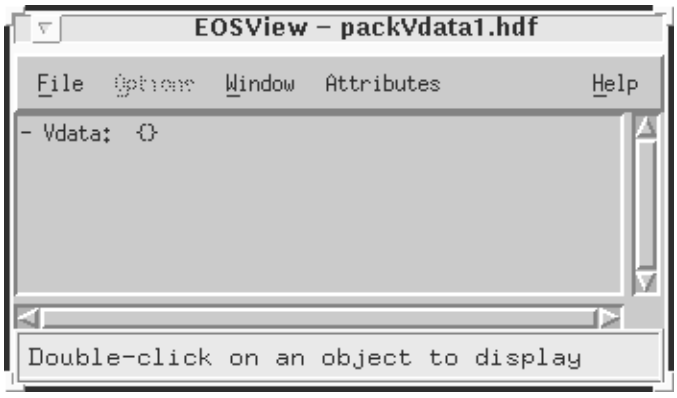

Figure 4.12.5-18. File Contents Popup Containing Vdata

Double-clicking on the Vdata entry brings up the “EOSView - VData Field Select” Popup (shown in Figure 4.12.5-19). This window lists all the field names in the selected Vdata. The operator may select one or more fields for display. If the fields contain multiple values for a field, that field will appear in its own table.

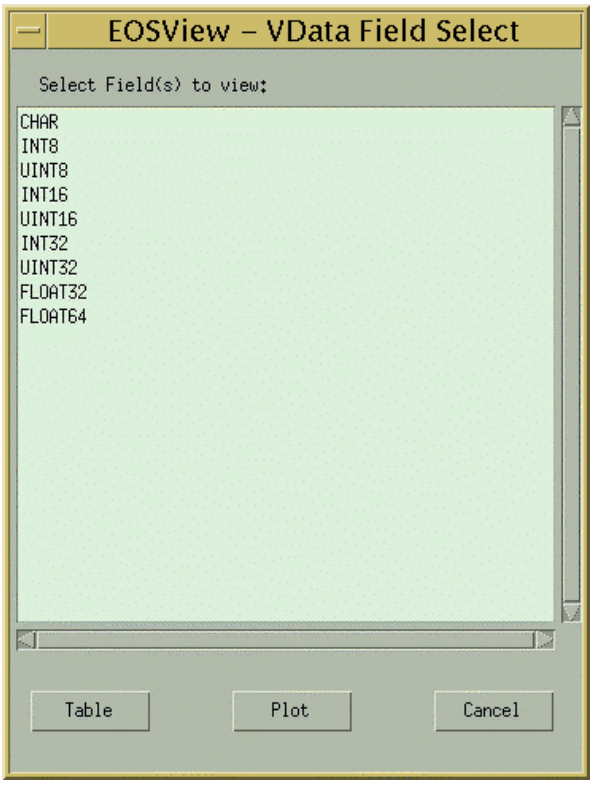

Figure 4.12.5-19. EOSView - Vdata Field Select Popup

Table button - Once the operator has selected the fields desired, pressing the table button will cause the Vdata to appear in a table.

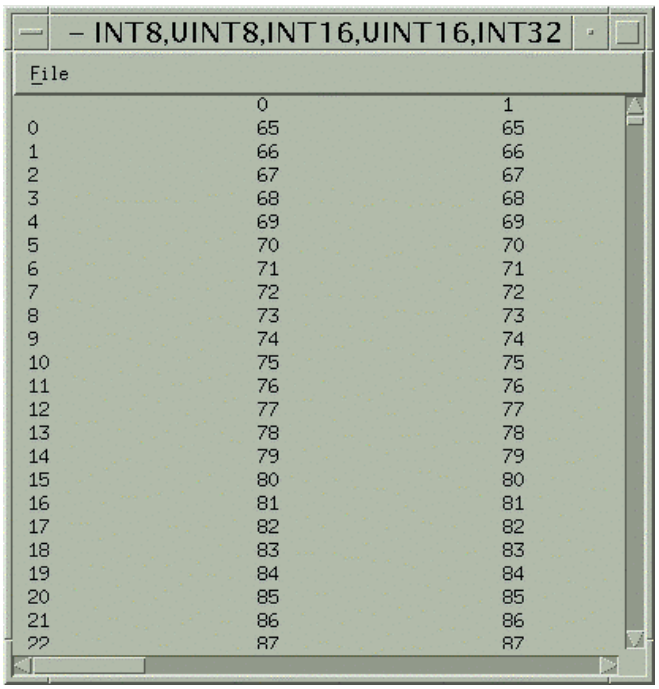

Figure 4.12.5-20. Table containing Vdata field Popup

Plot button - The operator may select one or two non-character data fields and have the data plotted by pressing the plot button (see Figure 4.12.5-21).

Cancel button - Cancels all actions

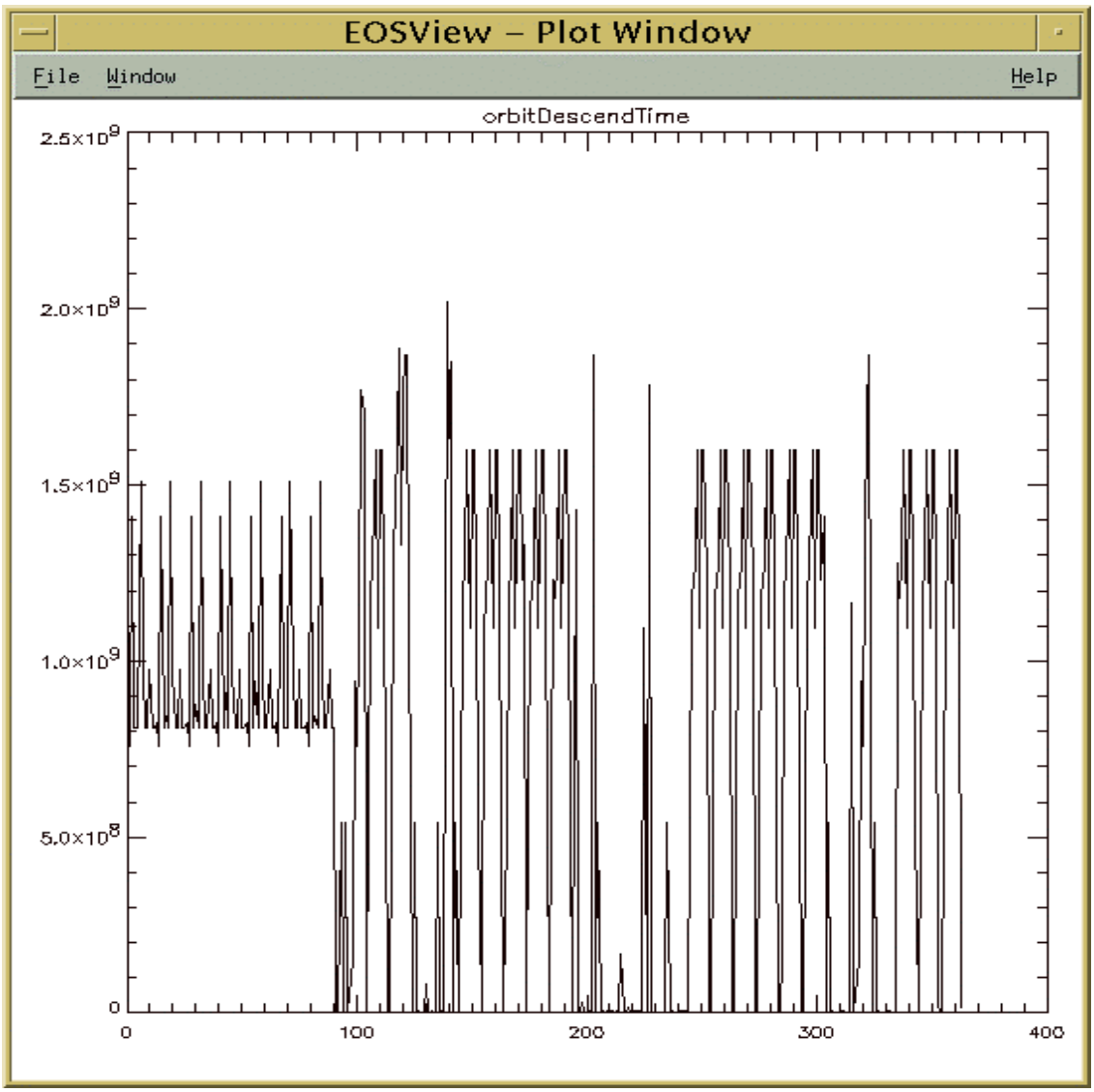

Figure 4.12.5-21. Plot Popup

The Plot Popup created from the Vdata Field Select window contains the following menu options:

- The **File** options allows the user to close the window by selecting **Close**.
- The **Window** option lists in a pull-down menu all windows which are currently open. Opens any window selected. See Section 5.2.22 "Window Pulldown Menu."

4.12.5.2.12 VGroup

If the object in the File Contents Display Window is a **Vgroup,** the contents of the VGroup will be added to the list and the list will be re-drawn in the list box. Clicking on a VGroup that has

already had the contents expanded will cause the contents of the VGroup to disappear and the list will be re-drawn in the list box. Figure 4.12.5-22 shows several expanded an unexpanded Vgroup categories.

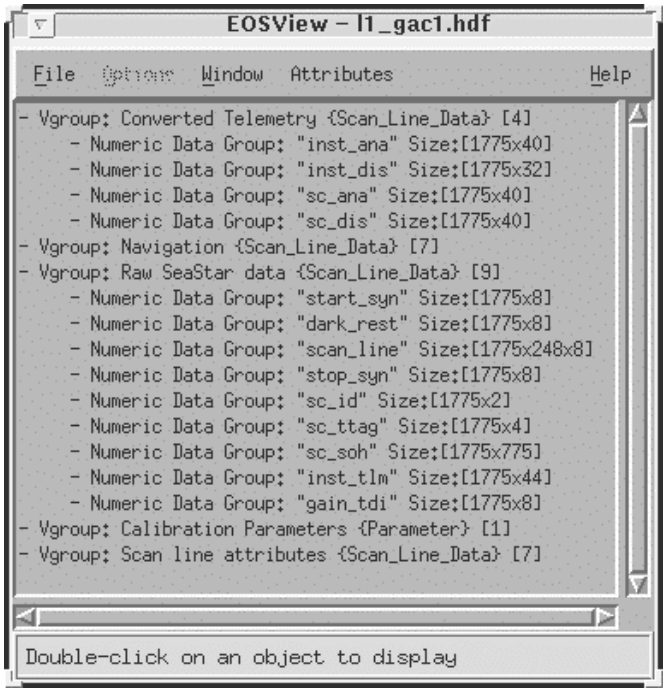

Figure 4.12.5-22. File Contents Popup containing Vgroups

4.12.5.2.13 Raster Image

In this example, the alltovs.hdf file was selected from the File Selection dialog, bringing up the File Contents Display Window shown in Figure 4.12.5-23.

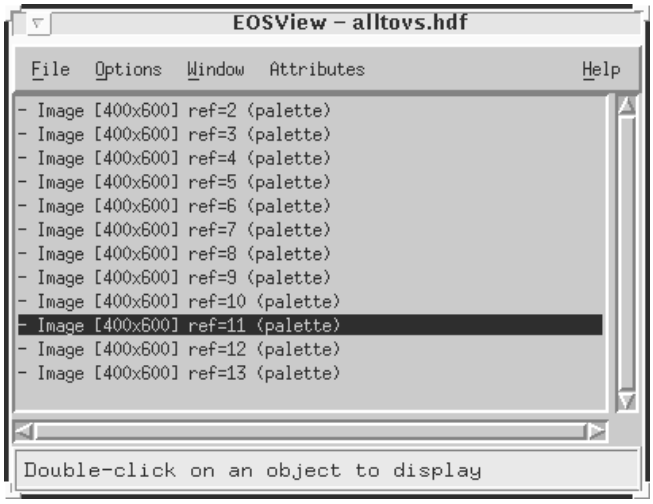

Figure 4.12.5-23. File Contents Popup containing Raster Images

Clicking on a Raster Image Group will cause the image to be drawn in an EOSView - Image Display Popup (see Figure 4.12.5-24).

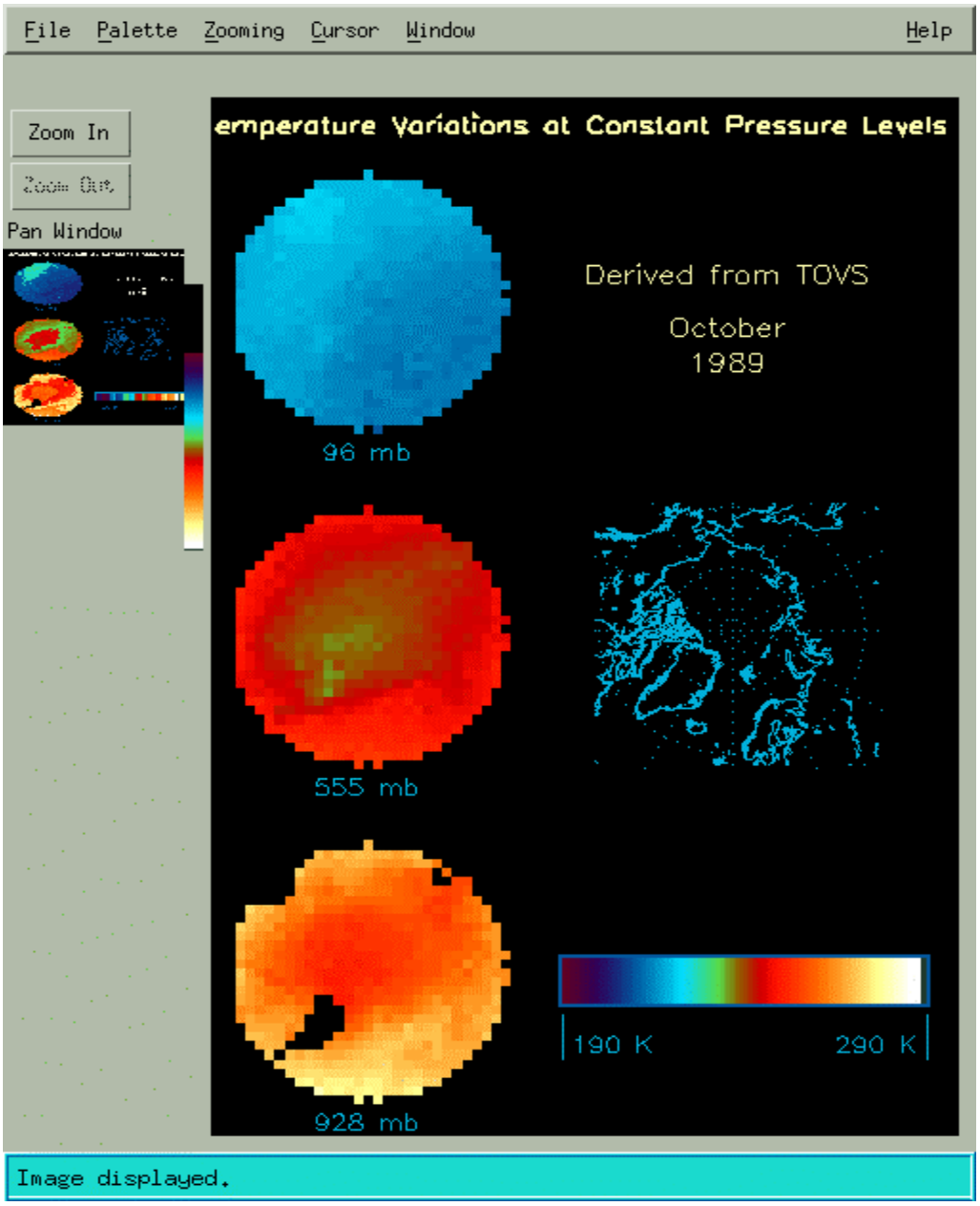

Figure 4.12.5-24. Raster Image Popup

A Raster image is different than the pseudo-color image shown in Section 4.12.5.2.3 since this image is not drawn from data. It is simply a visual depiction of an object. The menus and pushbuttons for this window are the same as those described for the pseudo-color display.

4.12.5.2.14 EOSView Grid Select GUI

In this example, the GridFile.hdf was selected from the File Selection dialog, bringing up the GridFile File Contents Display shown in Figure 4.12.5-25.

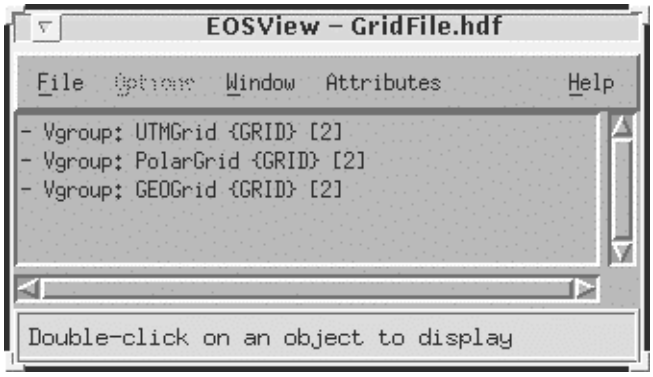

Figure 4.12.5-25. Grid File Contents Display Popup

Double-clicking on a selection (in this case, the object *Vgroup: UTMGrid {GRID} [2]* was selected) brings up the Grid Select Popup shown in Figure 4.12.5-26.

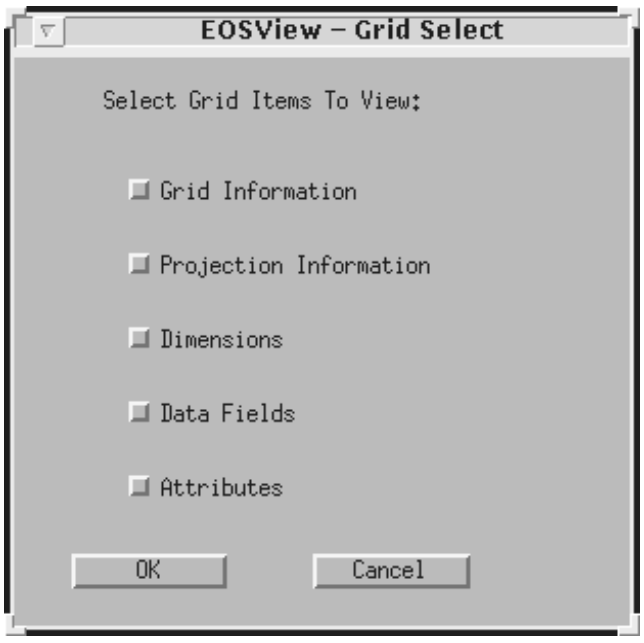

Figure 4.12.5-26. Grid Select Popup

All of the following options are available for selection: Grid Information, Projection Information, Dimensions, Data Fields, and Attributes. Selecting **OK** will bring up windows for all the items selected. Clicking on **Cancel** will return the operator to File Contents Window. Assuming that all the items have been selected, the following windows will appear:

Grid Information Dialog

To view a summary of a selected Grid object, click on the Grid Information checkbox. The Grid Information dialog Popup (shown in Figure 4.12.5-27) displays information about the selected grid such as X-Dimension value, Y-Dimension value, Upper Left Point values, and Lower Right Point values.

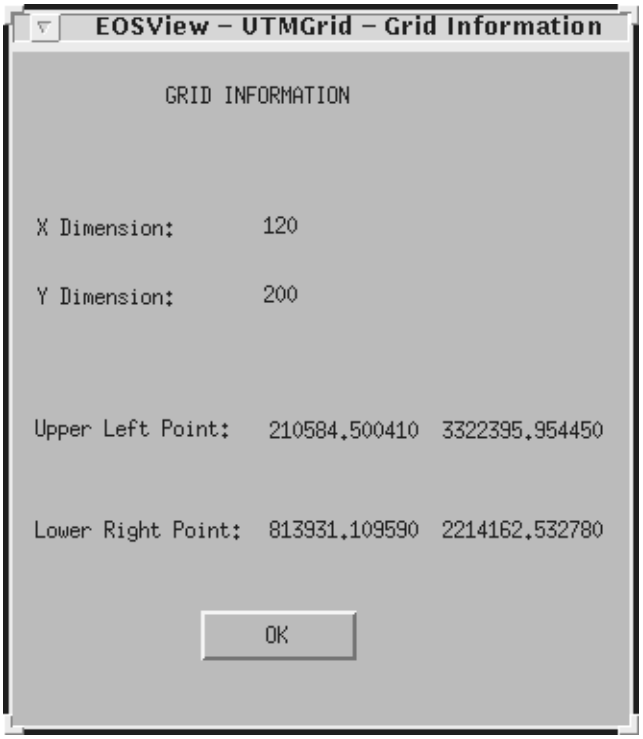

Figure 4.12.5-27. Grid Information Dialog Popup

This window can be closed by pressing the **OK** button.

Projection Information

To view the Projection Information of the selected Grid object, click on the Projection Information checkbox in the EOSView - Grid Select window and press the **OK** button. This will cause the EOSView - Grid Projection Information Popup shown in Figure 4.12.5-28 to appear.

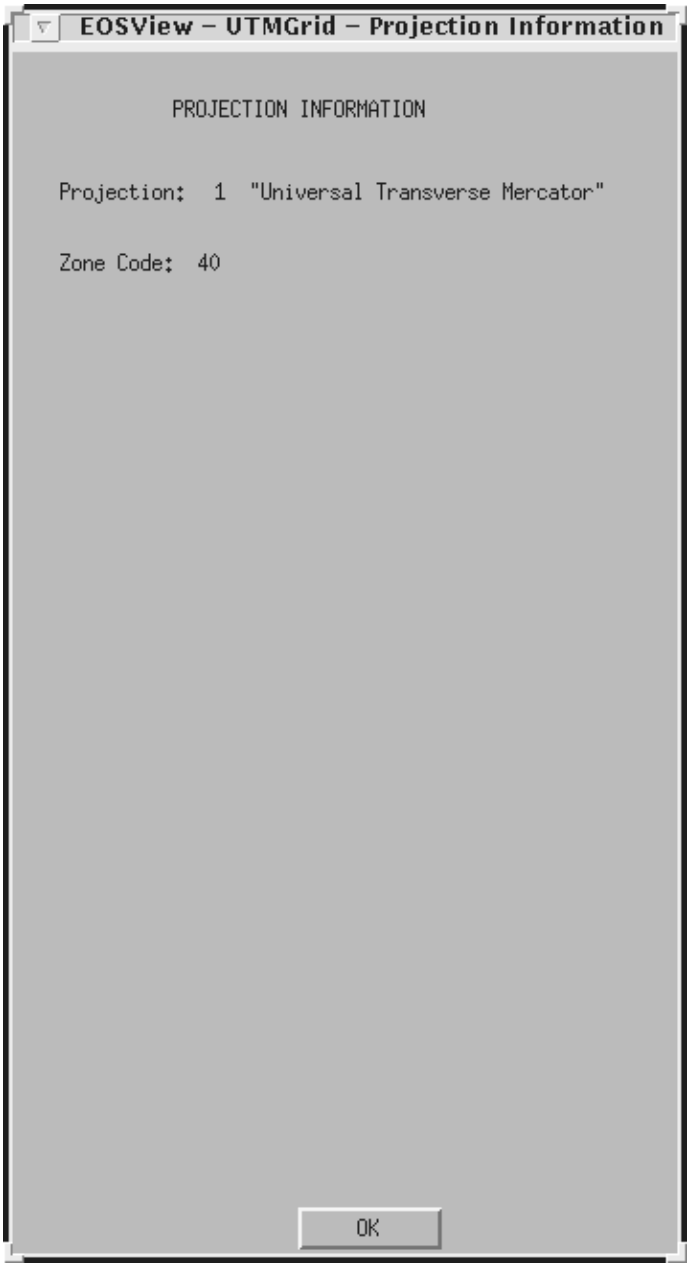

Figure 4.12.5-28. Projection Information Popup

The Projection Information Popup displays information about the projection of the selected grid in a dialog box. The first item displayed is the Projection itself. If the projection is Universal Transverse Mercator, the next item is displayed in the Zone Code. For any other projection the next items displayed are the thirteen (13) Projection Parameters. This window can be closed by pressing the **OK** button.

Dimensions

To view the dimensions of the selected Grid object, click on the Dimensions checkbox in the EOSView - Grid Select Popup and press the **OK** button. This will cause the EOSView - Grid Dimensions window (shown in Figure 4.12.5-29) to appear.

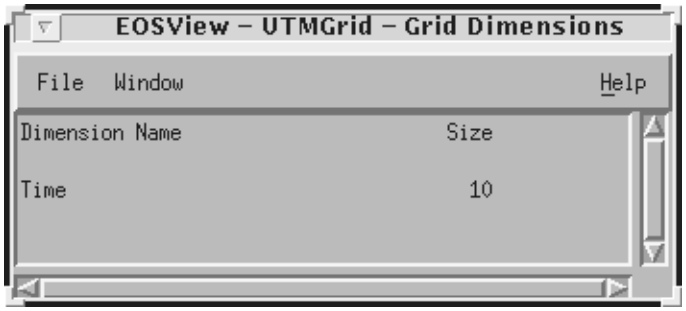

Figure 4.12.5-29. Grid Dimensions Popup

This window lists Dimension Names and Sizes for the selected Grid in table form in a scrollable window. The items listed are non-selectable and are for display/verification purposes only.

Data Fields

To view the Data Fields of the selected Grid object simply click on the Data Fields checkbox in the EOSView - Grid Select Popup and press the **OK** button. This will cause the EOSView - Grid Data Fields window (shown in Figure 4.12.5-30) to appear.

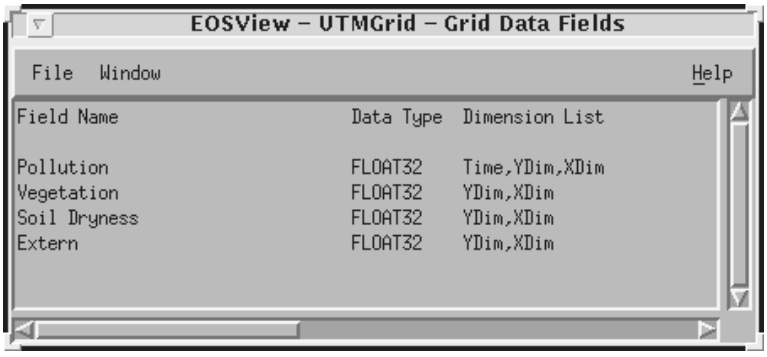

Figure 4.12.5-30. Grid Data Fields Popup

To view a slice of the Grid Geolocation/Data Field data, move the pointer over the object and double click the left mouse button. This will cause the EOSView - Start/Stride/Edge Popup (shown in Figure 4.12.5-31) to appear.

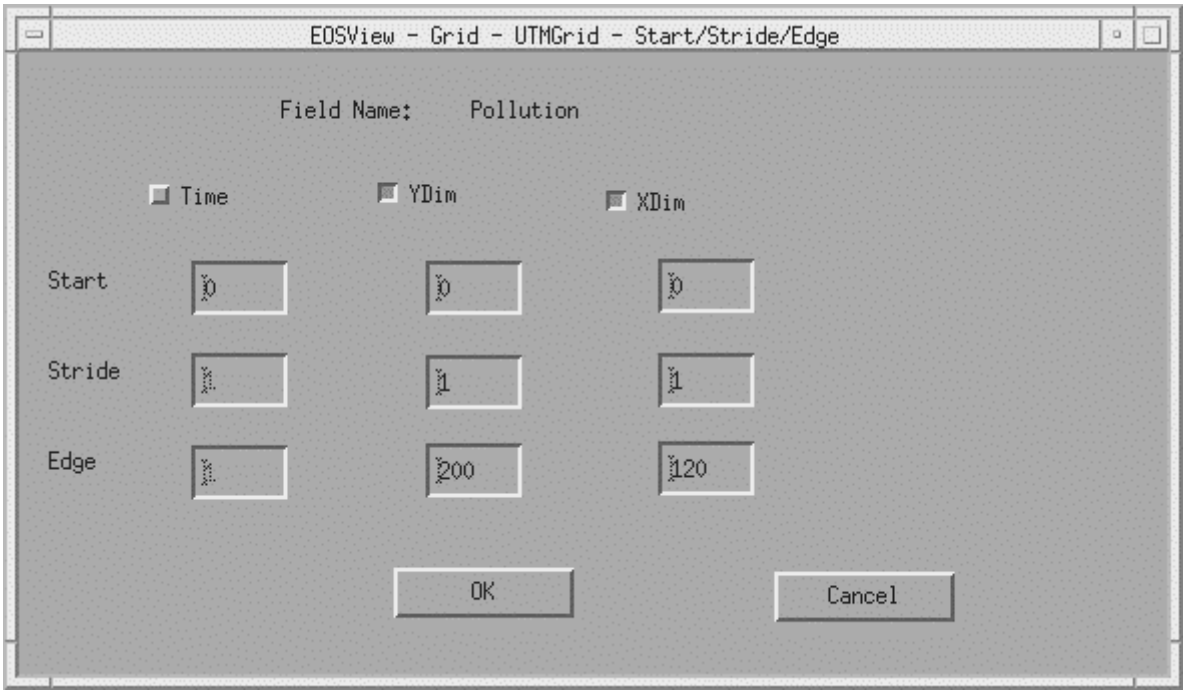

Figure 4.12.5-31. Start/Stride/Edge Popup

Table 4.12.5-8 describes the Start/Stride/Edge Popup fields.

Table 4.12.5-8. Start/Stride/Edge Popup Field Description

Field Name	Data Type	Size	Entry	Description
Start	Integer	N/A	required	Start for grid geolocation/data field data
Stride	Integer	N/A	required	Stride for grid geolocation/data field data
Edge	Integer	N/A	required	Edge for grid geolocation/data field data

This Popup displays the Start, Stride, and Edge values for each dimension (there may be up to eight). The start value for each dimension may be edited but the stride and edge values may only be edited for the selected dimensions. This is a way of subsampling the data desired. A dimension may be selected by clicking on the check box next to the dimension name. A maximum of two dimensions may be selected since only a two dimensional table can be displayed.. Once the

operator has entered the desired data the **OK** button may be pressed and the selected dimension data will be displayed in the EOSView - Grid Table. For more information on a Table, building a pseudo-color image, and the Min/Max Values Popup, see Section 4.12.5.2.3. The operator may cancel all actions by pressing the **Cancel** button.

Note that if an input error occurs, a warning dialog (Figure 4.12.5-32) will appear, displaying the dimension name that is in error and a size total. The operator must meet the criteria in the formula displayed in the warning dialog. Click OK to return to the Start/Stride/Edge Window to re-enter the correct values.

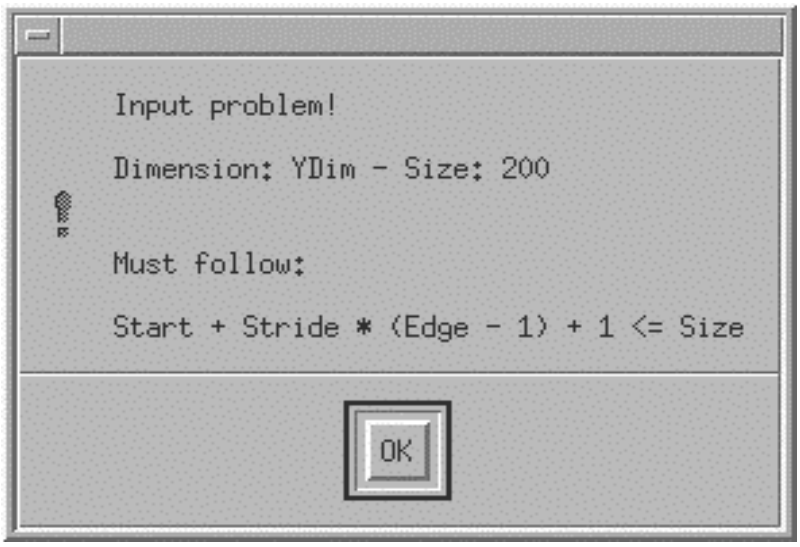

Figure 4.12.5-32. Warning Popup

Attributes

Clicking on the Attributes checkbox in the EOSView Grid Select Popup brings up the Attributes Text Display shown in Figure 4.12.5-33.

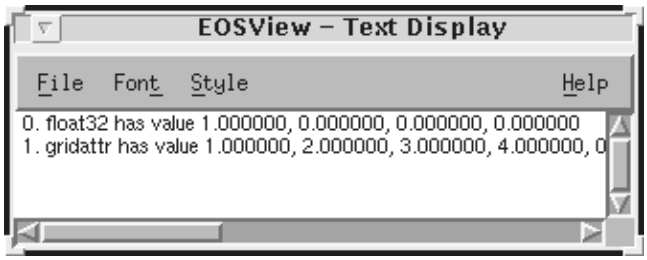

Figure 4.12.5-33. Attributes Text Display Popup

This display shows the attributes associated with a particular dataset. The text display can be closed from the **File** pulldown menu, the text can be modified using the **Font** and **Style** pulldown menus, and additional help can be obtained from the **Help** pulldown menu (see Section 4.12.5. 2.17.5 “Help Pulldown Menu.”

4.12.5.2.15 EOSView Swath Select

In this example, the SwathFile.hdf file was selected from the File Selection dialog, bringing up the File Contents Popup shown in Figure 4.12.5-34.

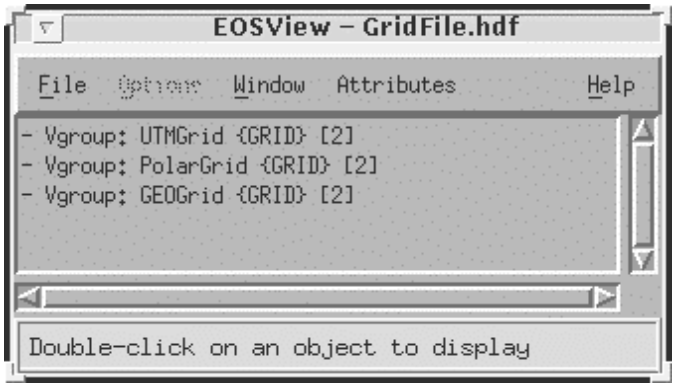

Figure 4.12.5-34. SwathFile File Select Popup

Double clicking on an item in the File Select window brings up the Swath Select Popup shown in Figure 4.12.5-35.

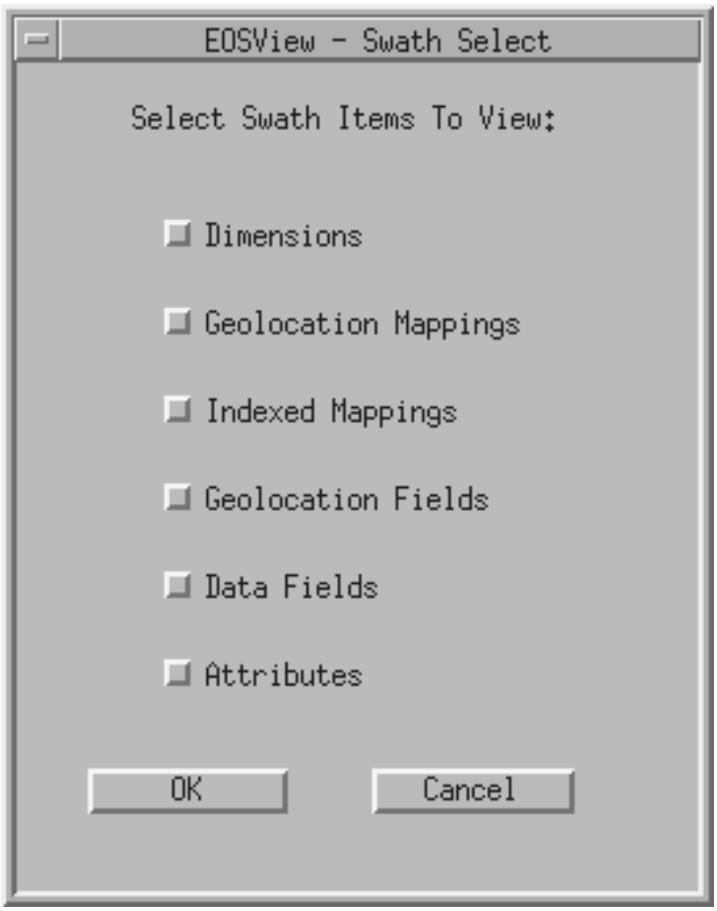

Figure 4.12.5-35. Swath Selection Popup

As many options as desired can be selected from the following list: Dimensions, Geolocation Mappings, Indexed Mappings, Geolocation Fields, Data Fields, and Attributes. Selecting OK will bring up windows for all the items selected. Clicking on Cancel will return the operator to the main Swath screen. Assuming that all the items have been selected, the following windows will appear.

Dimensions

To view the dimensions of the selected Swath object, click on the Dimensions checkbox in the EOSView - Swath Select Popup and press the OK button. This will cause the EOSView - Swath Dimensions Popup to appear. This window lists the Dimension Names and Sizes for the selected Swath in a table form in a scrollable window. The items listed are non-selectable and are for display/verification purposes only.

Geolocation Mappings

To view the Geolocation Mappings of the selected Swath object, click on the Geolocation Mappings checkbox in the EOSView - Swath Select Popup and press the OK button. This will cause the EOSView - Swath Geolocation Mappings window (shown in Figure 4.12.5-36) to appear.

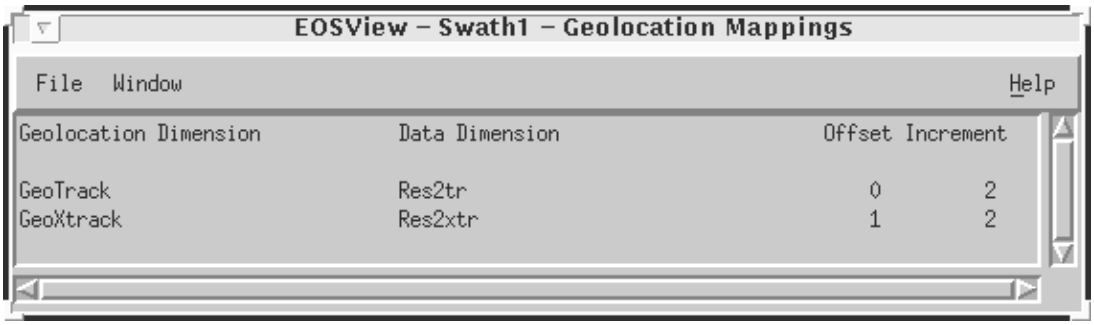

Figure 4.12.5-36. Swath Geolocation Mappings Popup

This window lists the Geolocation Dimensions, Data Dimensions, Offsets, and Increments for the selected Swath in a table form in a scrollable window. The items listed are non-selectable and are for display/verification purposes only.

Indexed Mappings

To view the Indexed Mappings of the selected Swath object, click on the Indexed Mappings checkbox in the EOSView - Swath Select Popup and press the OK button. This will cause the EOSView - Swath Indexed Mappings Popup (shown in Figure 4.12.5-37) to appear.

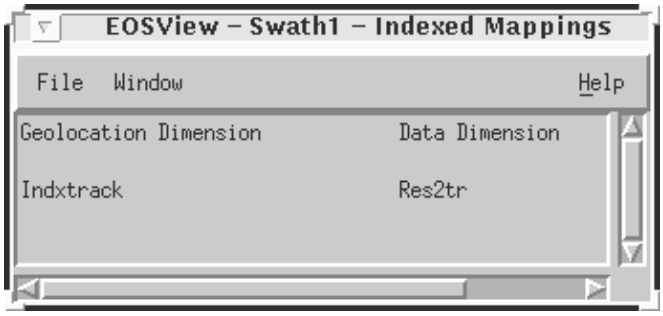

Figure 4.12.5-37. Swath Indexed Mappings Popup

Viewing the size of the mapping may be performed by moving the pointer over the object and double clicking the left mouse button. This will cause the EOSView - Indexed Mapping Sizes Popup (shown in Figure 4.12.5-38) to appear.

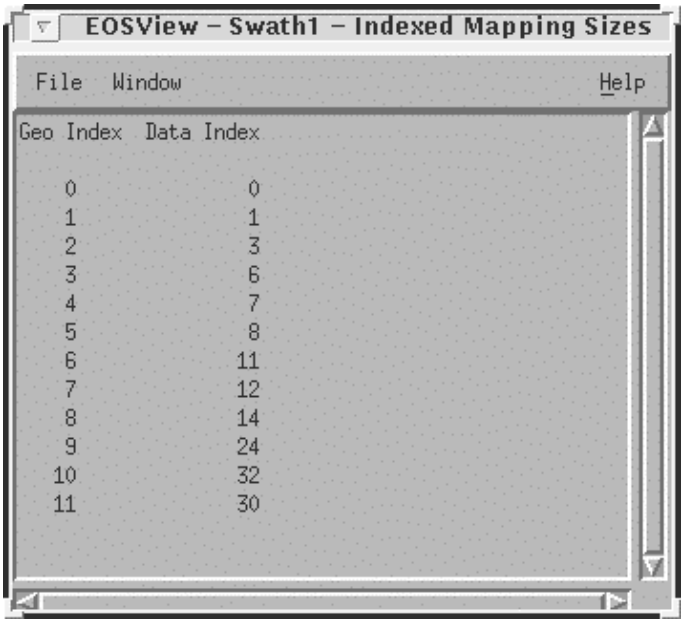

Figure 4.12.5-38. Index Mapping Sizes Popup

This window lists the Geolocation Indices and Data Indices for the selected Swath in a table form in a scrollable window. The items listed are non-selectable and are for display/verification purposes only. The window can be closed by selecting "Close" from the File menu.

Geolocation Fields

To view the Geolocation Fields of the selected Swath object, click on the Geolocation Fields checkbox in the EOSView - Swath Select Popup and press the OK button. This will cause the EOSView - Swath Geolocation Fields window (shown in Figure 4.12.5-39) to appear.

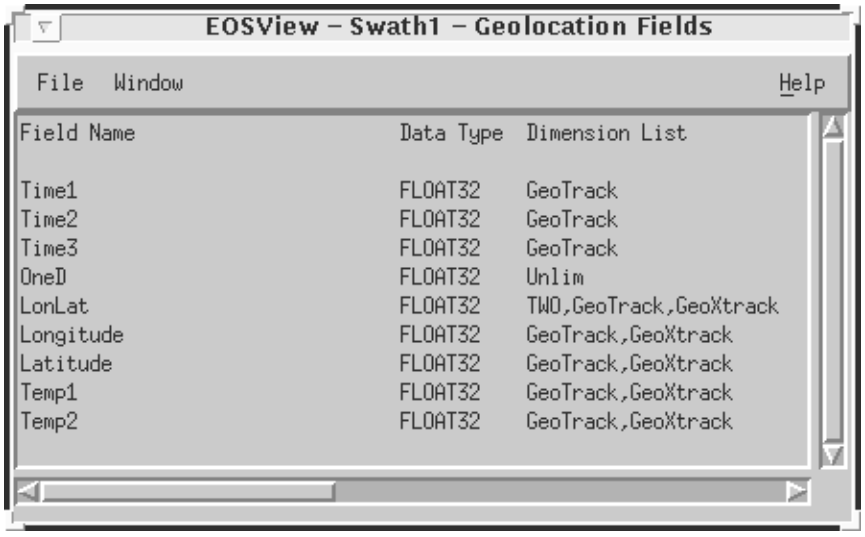

Figure 4.12.5-39. Swath Geolocation Fields Popup

Selecting a Swath Geolocation to view a slice of the data may be performed by moving the pointer over the object and double clicking the left mouse button. This will cause the EOSView - Start/Stride/Edge Popup to appear. This window lists the Start, Stride, and Edge values for each dimension listed.

Data Fields

To view the Data Fields of the selected Swath object, click on the Data Fields checkbox in the EOSView - Swath Select Popup and press the OK button. This will cause the EOSView - Swath Data Fields Popup to appear.

Attributes

To view the attributes of the selected Swath object, click on the Attributes checkbox in the EOSView - Swath Select window and press the OK button.

4.12.5.2.16 Point Files

In this example, selecting PointFile.hdf from the File Select dialog brings up the File Contents Popup shown in Figure 4.12.5-40.

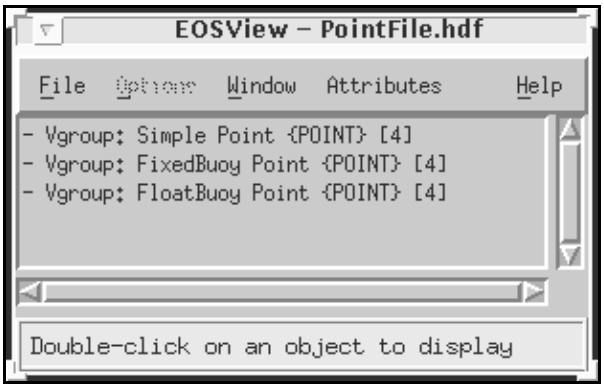

Figure 4.12.5-40. PointFile File Contents Popup

Double-clicking on an item in the PointFile Popup (in this example, the *Vgroup: FloatBuoy Point {POINT} [4]* object is selected) opens the Point Select Popup shown in Figure 4.12.5-41.

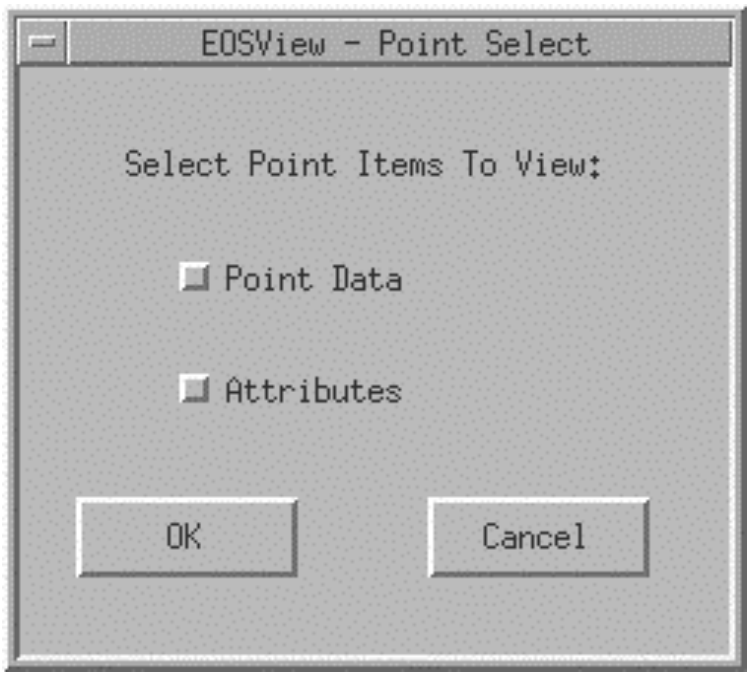

Figure 4.12.5-41. Point Select Popup

Either Point Data, Attributes or both options can be selected. Clicking on OK will open the corresponding windows for the options selected. Clicking on Cancel will return the operator to the main Point screen. Assuming both items have been selected, the windows as described below will appear.

Point Data

To view the Point Data of the selected Point object, simply click on the Point Data checkbox in the EOSView - Point Select window and press the OK button. This will cause the EOSView-Point Level Info Popup to appear as shown in Figure 4.12.5-42.

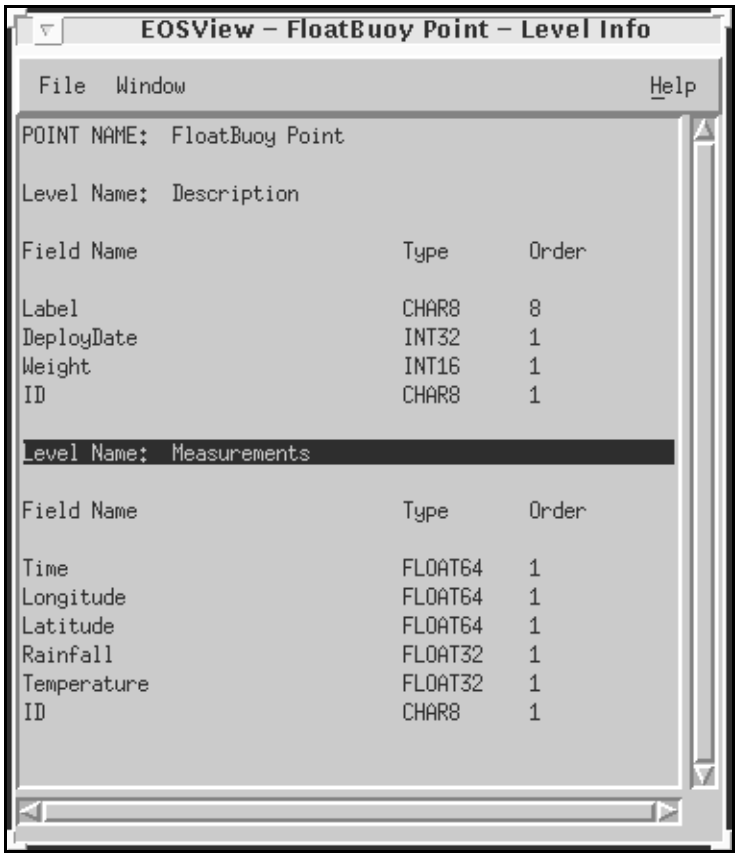

Figure 4.12.5-42. Point File Level Information Popup

Double-clicking on any **Level Name** will bring up the Vdata field select Popup, shown in figure 4.12.5-44. The operation of the Vdata field select Popup is described in Section 4.12.5.2.11.

Selecting a field or multiple fields will bring up the table window shown in Figure 4.12.5-43.

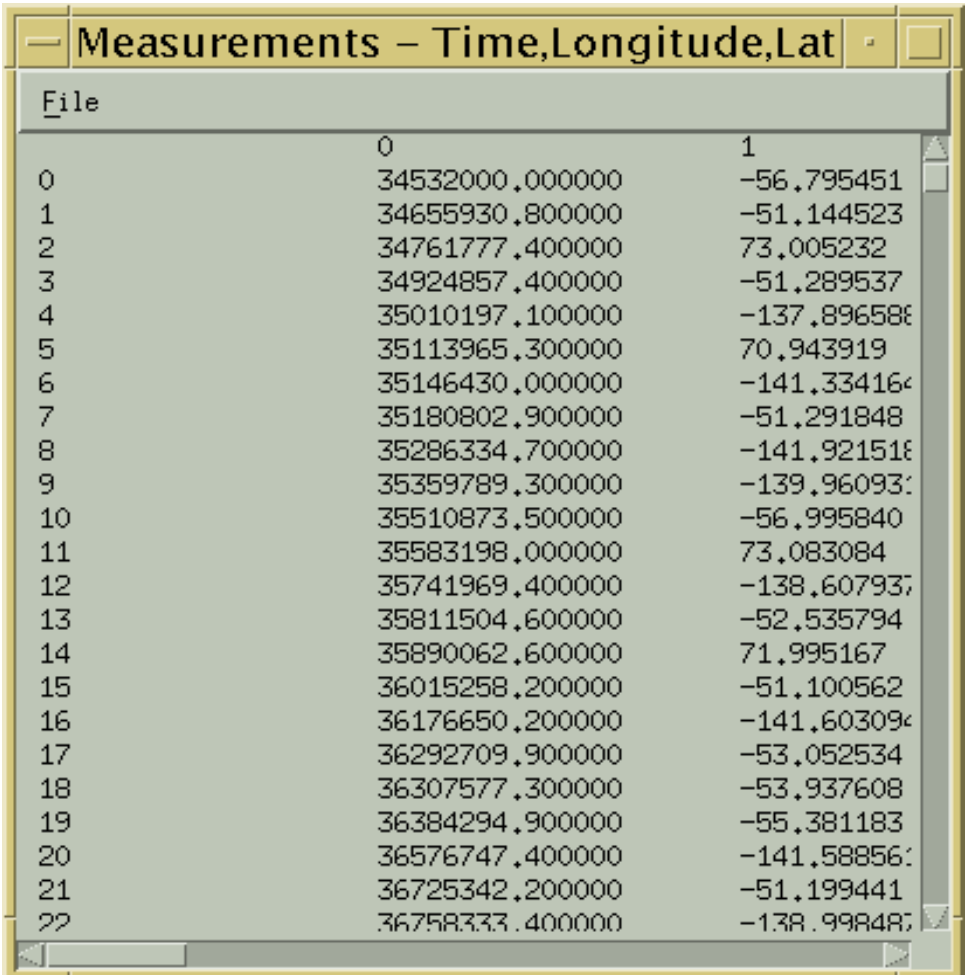

Figure 4.12.5-43. Vdata Table Popup

The data in this table can be saved by selecting Save from the File pulldown menu. The statistics of this table may be viewed by selecting Statistics from the File pulldown menu. To close this window select Close from the file pulldown menu.

Attributes

To view the attributes of the selected Point Select object, click on the Attributes checkbox in the EOSView - Point Select window and press the OK button. This window is similar to the Grid file attributes Popup described in Section 4.12.5.2.14 "Attributes."

4.12.5.2.17 Pulldown Menus

The File Contents Displays all have a common pulldown menu structure with the following options: File, Options, Window, Attributes, and Help. These are described in the sections below.

4.12.5.2.17.1 File Pulldown Menu

The File pulldown menu consists of the following options: File Info and Close. The File Info pulldown menu selection allows the operator to bring up information on the number of Raster Image Groups, Scientific Data Groups, Palettes, Vgroups, LoneVdata, and Annotations in the form of a File Information dialog as shown in Figure 4.12.5-44.

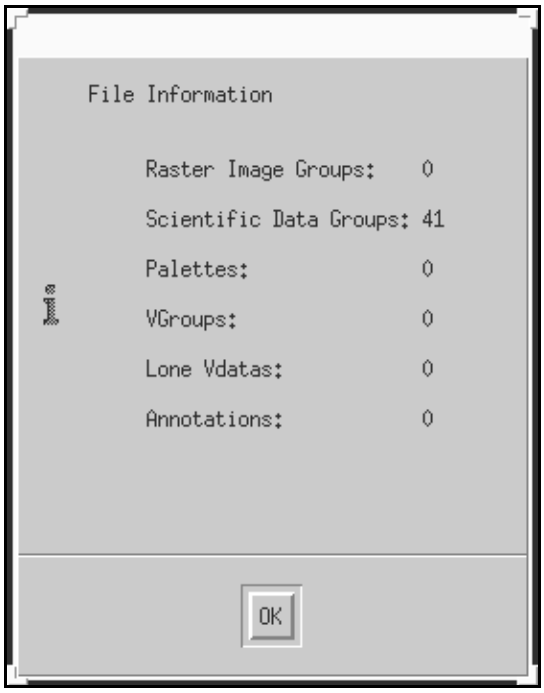

Figure 4.12.5-44. File Information Dialog

Clicking on **OK** button takes the operator back to the File Contents Window for the HDF file.

4.12.5.2.17.2 Options Pulldown Menu

The Options pulldown menu and its **Animate images** selection becomes sensitized when the selected file contains multiple Raster Image Groups. This will cause all the images to be lined up and displayed in order in an EOSView - Animation Window. The Animation Window is depicted in Figure 4.12.5-45, with different frames of an actual animation shown (skull.hdf file).

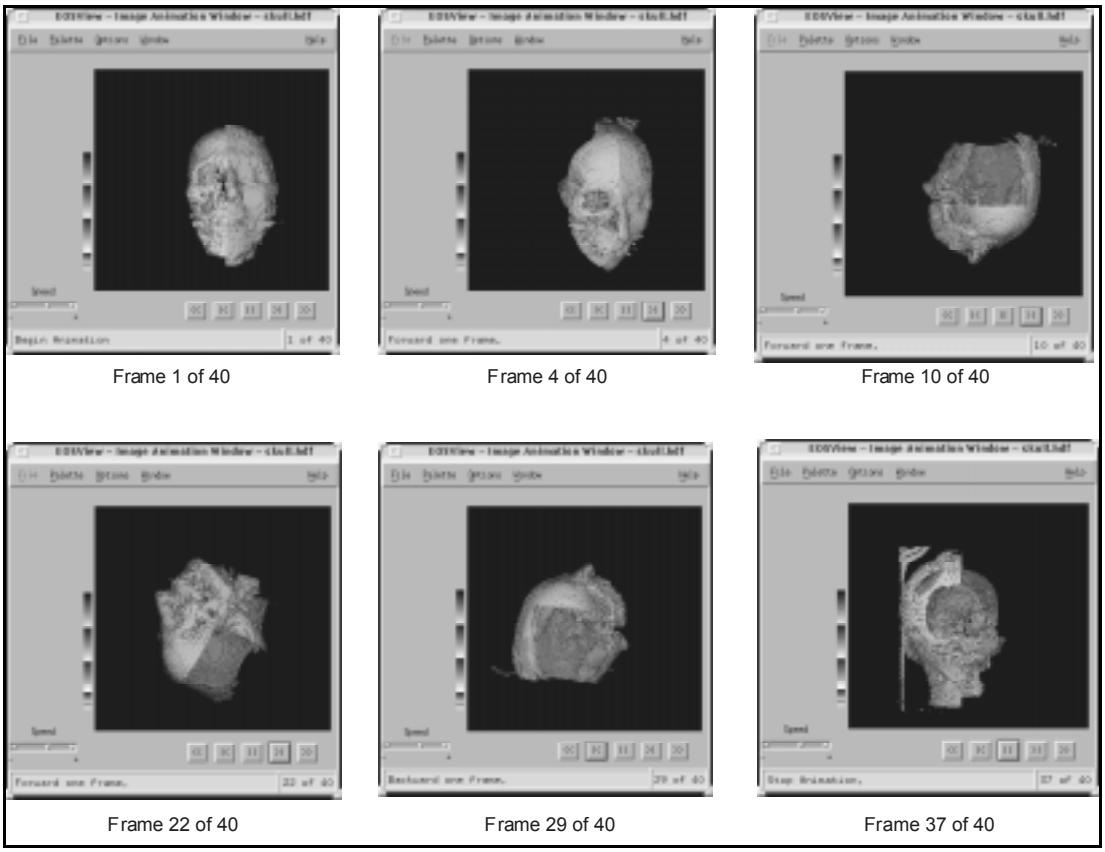

Figure 4.12.5-45. Animation Window Popup

The Animation Window has the following features:

- **Closing Animation Window** – The Close option on the menu bar of the animation window will cause the animation window to close.
- **Palette** – see Section 4.12.5.2.7 for a description of the Image Display palette.
- **Modes** -- There are three modes of animation. These modes may be selected by selecting the Options - Modes options of the animation window menu bar.
  - The first option "Stop at end" will display the images until the last image or first image is displayed. This is based upon what direction was selected for animation.
  - The second option "Continuous run" will cause the animation to go into an endless loop in the direction selected until the stop button is pressed.
  - The third option "Bounce" will cause the animation to run back and forth in forward and reverse order until the stop button is pressed.

- **Speed Control** -- The speed control slider will adjust the speed of the animation to the desired speed. Moving the slider in the "+" direction will increase the animation speed while moving the slider in the "-" direction will cause the animation to decrease in speed.
- **Window** – see Section 4.12.5.2.17.3 “Window Pulldown Menu.”
- **Help** – see Section 4.12.5.2.17.5 “Help Pulldown Menu.”
- **Start/Stop Buttons** -- There are five buttons centered underneath the animation image. The five buttons are labeled "<<", "|<", "||", ">|", and ">>". These buttons are known as the Start/Stop Buttons.
  - The button labeled "<<" will cause the animation to begin in reverse direction.
  - The button labeled "|<" will cause the animation image to decrease by one frame.
  - The button labeled "||" is the Stop button and will cause the animation to stop.
  - The button labeled ">|" will cause the animation image to increase by one frame.
  - The button labeled ">>" will cause the animation to begin in forward direction.

  The mode of operation of these buttons will be controlled by selecting the Modes option on the menu bar.

4.12.5.2.17.3 Windows Pulldown Menu

The Window pulldown menu lists all windows which are currently open. Any window selected from this list will be shuffled to the top. Figure 4.12.5-46 shows the Window pulldown menu provided when the EOSView Main Window, orbital.hdf, rainbow.hdf and skull.hdf files are open.

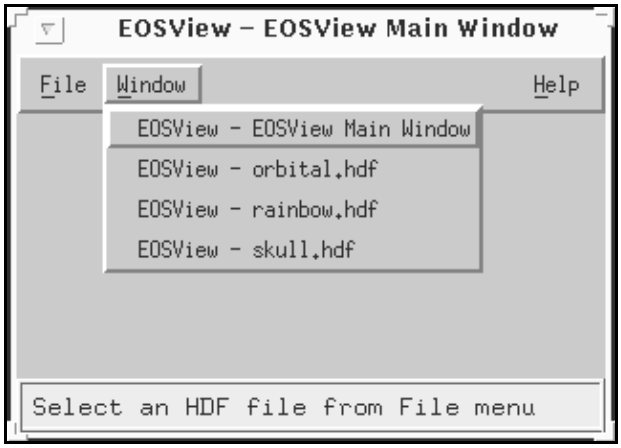

Figure 4.12.5-46. EOSView Main Screen Showing Window Pulldown Menu

The Window pulldown menu provides the same function on all other screens on which it appears.

4.12.5.2.17.4 Attributes Pulldown Menu

The Attributes option contains one pull-down menu item "Global…." which brings up a text file window (shown in Figure 4.12.5-47) with a list of attributes (e.g., parameters, values, version numbers) for the entire file or brings up a dialog which states that there are no attributes available.

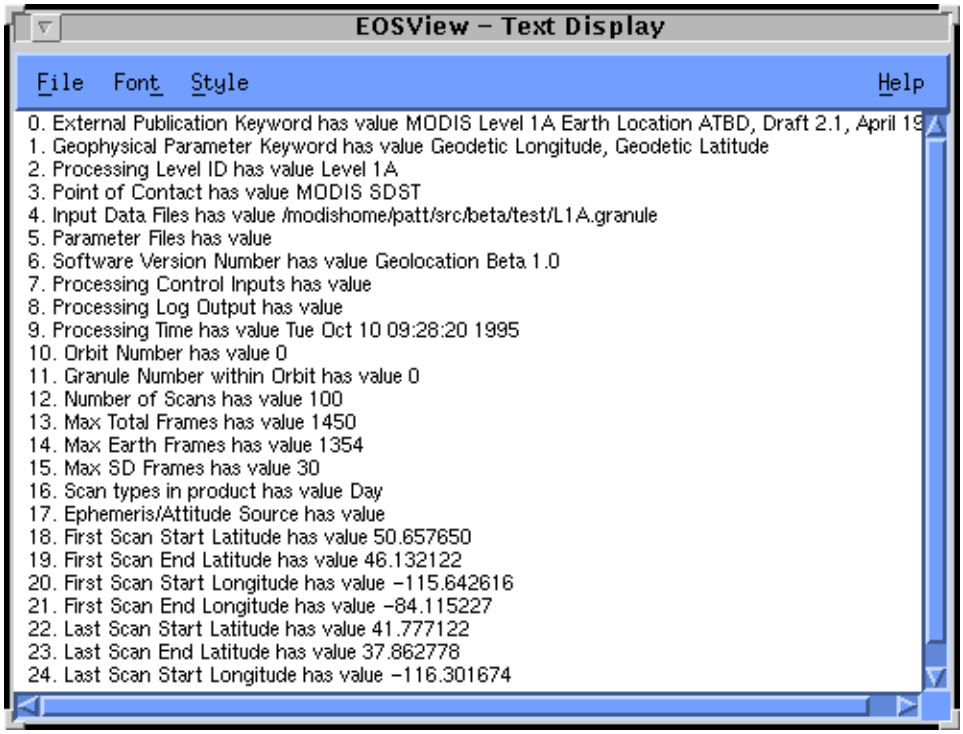

Figure 4.12.5-47. Text Display Popup

From the text window, the operator can do the following using the pull-down menus:

- **File** – exit the window
- **Font** – select from a list of fonts (e.g., courier, Helvetica). A box showing what the text looks like based on the selection is provided.
- **Style** – select from a list of styles (e.g., normal, bold, italic) and point sizes (e.g., 8 pt, 10 pt.)
- **Help** – see Section 4.12.5.2.17.5 "Help Pulldown Menu."

4.12.5.2.17.5 Help Pulldown Menu

The Help option contains a pulldown menu with the following selections: help on context, on help, on window, keys, contents, index and version.

Help On Context – turns the mouse pointer into a "**?**" which can be clicked on an area of interest, bringing up help text for that item.

Help On Help – tells the operator how to use the EOSView on-line help feature (see Figure 4.12.5-48) to help understand how to navigate through the Help system using the on-line hypertext system.

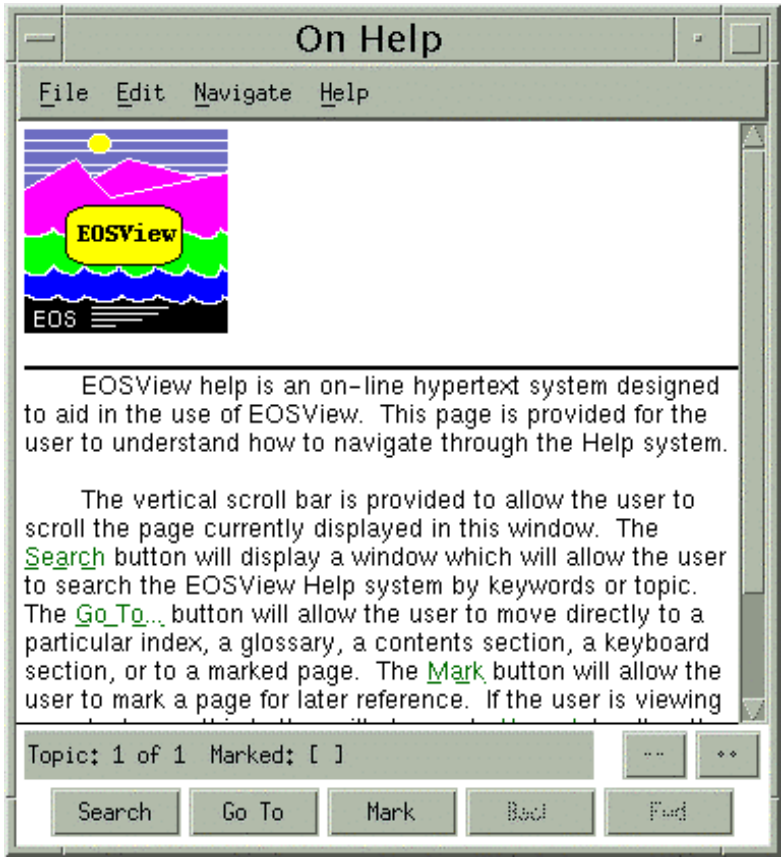

Figure 4.12.5-48. EOSView Online Help Popup

- **File** – allows the operator to exit the On Help window. Print and Print Setup are not available.
- **Edit** – allows the operator to Copy, Copy Part of a Topic, or Copy as Wrapped

- **Navigate** – allows the operator to search for a topic, go to a specified topic, bookmark items of interest, go forward and back to a topic (these items are available in the form of pushbuttons at the bottom of the screen), and view a previous or next topic.

- **Help** – provides help on how to use help and “about help” (not functional).

The On Help window provides the following pushbuttons:

- The **"Search…"** button provides a way to search the EOSView Help system in one of two ways. The operator may select to search by Topic in which case a list of topics will be displayed for the operator to choose from or the operator may select search by Keyword in which case the operator will be presented with a list of keywords from which to choose.

- The **"Go To..."** button allows the operator to move to one of five topics:

  1. Index - the help described in the Help - Index selection from the menu bar.

  2. Glossary - a defined glossary of selectable terms common to EOSView.

  3. the help described in the Help - Contents selection from the menu bar.

  4. the help described in the Help - On Keys selection from the menu bar.

  5. any marked page (see below).

- The **"Mark"** button allows the operator to mark a page. Once the page is marked the page appears in a list box in the "Topic Go to Dialog" box. The marked page may then be selected and immediately recalled. The "Mark" button will appear as "Unmark" when viewing a marked page.

- The **"Unmark"** button allows the operator to unmark a marked page. If the operator is currently viewing a marked page, an "X" appears in the check box labeled "Marked:." Pressing the "Unmark" button will cause the "X" to disappear and the page will not appear in the list box of the "Topic Goto Dialog."

- The **"Back"** button will return the operator to the previously viewed page. The operator should think of the help system as a book. The back button will only appear sensitized if the previously viewed page would be logically backward from the point of current view.

- The **"Forward"** button will move the operator to the last forward page viewed. The operator should think of the help system as a book. The forward button will only appear sensitized if the previously viewed page would have a page number greater than the page being currently viewed.

Help On Window

The Help On Window is the same as the Help On Index Window shown below.

Help On Keys

When Help On Keys is selected from the Help pulldown menu, the following message will appear in a Keys Window: “EOSView uses no special keys to traverse through the program. To navigate through EOSView simply use the mouse and click on the options that are desired.”

Help On Contents

The Help On Contents window tells the operator that EOSView is a tool written to assist operators view the contents of HDF files and that it is capable of displaying the contents of files containing HDF-EOS data. More help can be obtained by selecting the topic desired (see Figure 4.12.5-49).

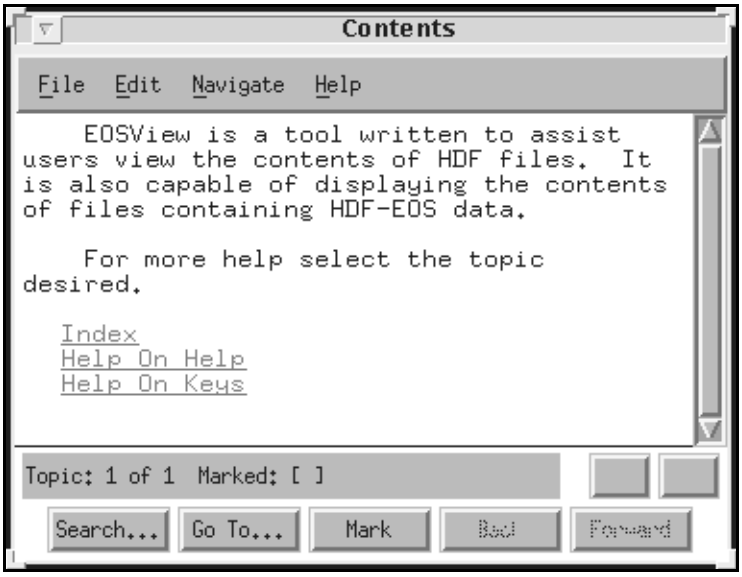

Figure 4.12.5-49. Help On Contents Popup

Help On Index

Selecting Help On Index brings up the Index window shown in Figure 4.12.5-50. This Popup presents a list of each EOSView window and a list of hypertext help items.

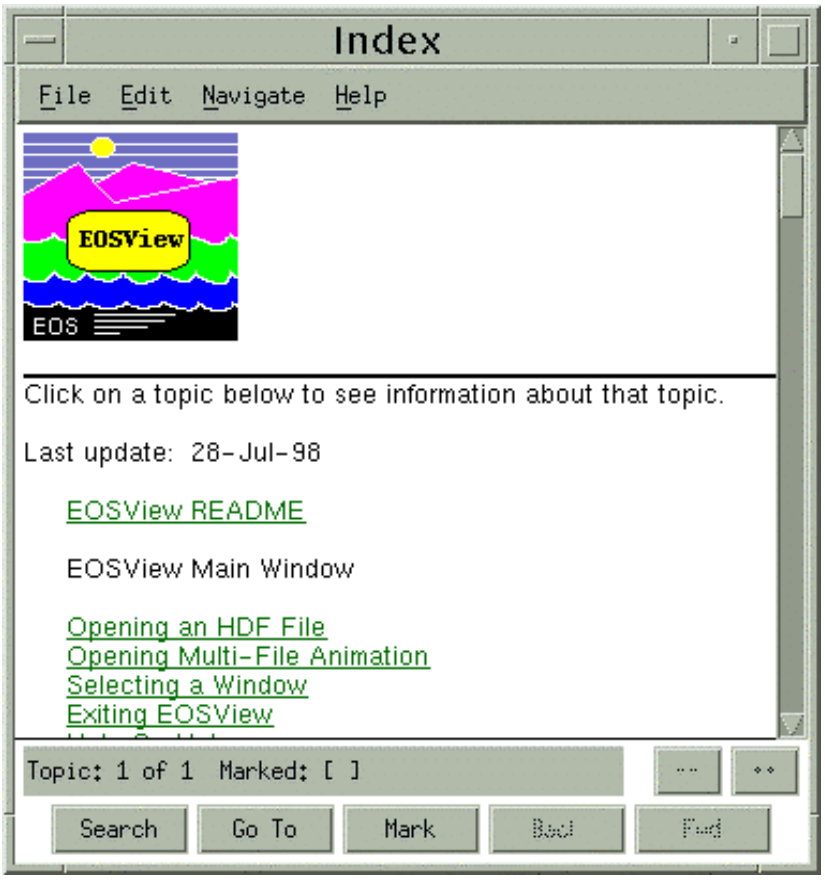

Figure 4.12.5-50. Help On Index Popup

Help On Version

Selecting Help On Version from the Help pulldown menu brings up the dialog shown in Figure 4.12.5-51.

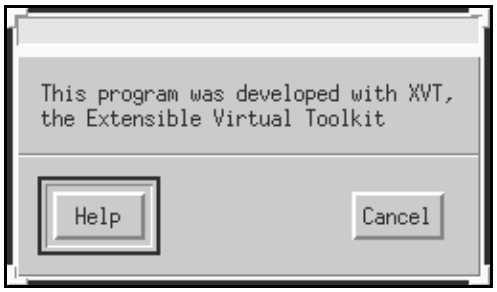

Figure 4.12.5-51. Help On Version Dialog

Clicking on the Help button takes the operator to the Help on Contents screen. Click on Cancel to close the dialog.

4.12.5.3 Required Operating Environment

For information on the operating environment, tunable parameters, and environment variables of the EOSView refer to the 920-TDx-013 “Custom Code Configuration Parameters” documentation series . The “x” refers to the installed location, e.g. 920-TDG-013 is for GSFC DAAC.

The following Table 4.12.5-9 identifies the supporting products this tool depends upon in order to function properly.

Table 4.12.5-9. Support Products and Protocols for EOSView

Product Dependence	Protocol Used	Comments
IDL	Internal I/F	Image and Plot Display
xvt	Internal I/F	GUI Builder

4.12.5.4 Databases

None.

4.12.5.5 Special Constraints

EOSView will read only HDF and HDF-EOS formatted files.

4.12.5.6 Outputs

Output from the EOSView tool are the data displayed on the GUI screen discussed in the previous 4.12.5.2 paragraph and related sub-paragraphs.

4.12.5.7 Event and Error Messages

See Appendix A.

4.12.5.8 Reports

None.

This page intentionally left blank.

4.12.6 User Registration Tool

The User Registration GUI is a world wide web based tool that provides a first-time EOSDIS user the ability to register online. During the registration process the user is asked to select a "home DAAC". The selection chosen by the user can be based either on geographical location of the DAAC (the closer the DAAC to the user site the more expedited the retrieval of scientific data) or based on the area of scientific interest specific to the DAAC. The EOSDIS opens an account for the user as a result of the registration request. Once the account is opened the EOSDIS provides enhanced order and access capabilities to the user. The information gathered during the registration process also allows the EOSDIS to provide accounting and billing service for the user. These services will be handled by the "home DAAC" selected by the user during the registration.

Table 4.12.6-1 itemizes the functions of the User Registration tool.

Table 4.12.6-1. Common Functions Performed with the User Registration Tool

Operating Function	GUI	Description	When and Why to Use
Allow the user to select a "home DAAC"	User Registration - chose a home DAAC	Allow the users to specify a DAAC as home DAAC either because the data they are interested in are stored at that DAAC or because the DAAC is geographically the closest to the user location.	When the user decides to register and has to select where his information are going to be stored.
Gather user information	User Registration - Register	Allow the users to provide personal information including mailing addressing, scientific area of interest and professional/educational affiliation.	When the user decides to register and has to provide mandatory - and optional - information so that an account can be open. User related functions such as accounting and billing will based on this information.

4.12.6.1 Quick Start Using User Registration

This tool consist of two main web pages:

- User Registration - Choose a Home DAAC
- User Registration - Register

The user can access both web pages starting from the EOSDIS Home Page by typing in the proper URL, following a link within a web browser, or clicking on the User Registration icon, as described in the following Sections 4.12.6.1.1 and 4.12.6.1.2.

4.12.6.1.1 Invoking the ECS Home Page from the Command Line Interface

The User Registration Tool works under the assumption that the user decides to register after accessing the EOSDIS home page with a world wide web browser. Hence, no command line is required to start the tool. The EOSDIS home page can be accessed via a link available in a web page where the EOSDIS services are advertised or it may be reached by typing in the URL in the Location field of the browser. The URL has the following structure:

http://<*ServerName*>.[<*DAACName*>].ecs.nasa.gov:<*Port#*>/

where:

the <***ServerName***> is the name of the interface server used to provide the internet services at an EOSDIS DAAC;

the <***DAACName***> is an ID for an EOSDIS DAAC (e.g., gsfc<***ringID***> where <***ringID***> is the one-letter ID that identifies the ring in the DAAC the <***ServerName***> belongs to); note that <***DAACName***> should be specified only if an operator tries to connect internally to the EOSDIS home page while the name resolution service should make unnecessary this step for an external user.

and the <***Port#***> is the number assigned to the http service on the server machine and is related to the mode for which the service is provide (e.g., 10000 is the default port number that is assigned to the OPS mode).

Typing in the above URL address accesses the EOSDIS home page, discussed in the following Section 4.12.6.2. From there the option to go through the registration process is provided via an available html link.

4.12.6.2 User Registration Main Screen

Upon connecting to the EOSDIS home page, as discussed in the previous Section 4.12.6.1.1, the User is presented with the HTML page shown in Figure 4.12.6-1.

Each EOSDIS page contains two frames: the Left Hand Side (LHS) frame that is common to all the HTML-based ECS tools and the Main frame that includes the tool-specific page, in this case the EOSDIS home page. The LHS frame provides access, through nine buttons, to several ECS resources and functionality that are described in greater details in other sections of this document and are only briefly introduced here for completeness.

- **Home** creates a connection with the EOSDIS Home page, as shown in Figure 4.12.6-1;
- **On-line Directory** is a link to the Earth Science Online Directory tool;
- **Data Retrieval** provides access to three data retrieval tools made available by EOSDIS: B0SOT, Version 0 WWW Gateway, and JEST, all described in other sections of this document;

- **Documents** links a list of Earth Science related documents stored by EOSDIS;
- **Glossary** links to a list of definitions of terms commonly used in the EOSDIS environment;
- **Info Exchange** provides reference to EOSDIS-related Newsgroups and Bulletin Boards;
- **Comments** allows the user to provide feedback to the EOSDIS Operations personnel;
- **Help** links to on-line context sensitive help;
- **Site Index** brings up a map of the entire EOSDIS web site.

The Main frame includes a number of HTML links. This section describes the "User Registration" link.

Other links include:

- "**About EOSDIS**" links to documentation where the EOSDIS Web site high level overall purpose is explained to the newcomer user;
- "**Web and Java Tools**" connects with pages containing introductory technical documentation about tools offered by the EOSDIS system to optimize the retrieval of information and data available in the EOSDIS site;
- "**X/Motif Tools**" connects with a page from where several UNIX-based tools that allow to completely exploit the capabilities offered by the EOSDIS system can be downloaded;
- "**System Requirements**" displays a list of ECS recommended settings for Netscape for the most commonly used operating systems.

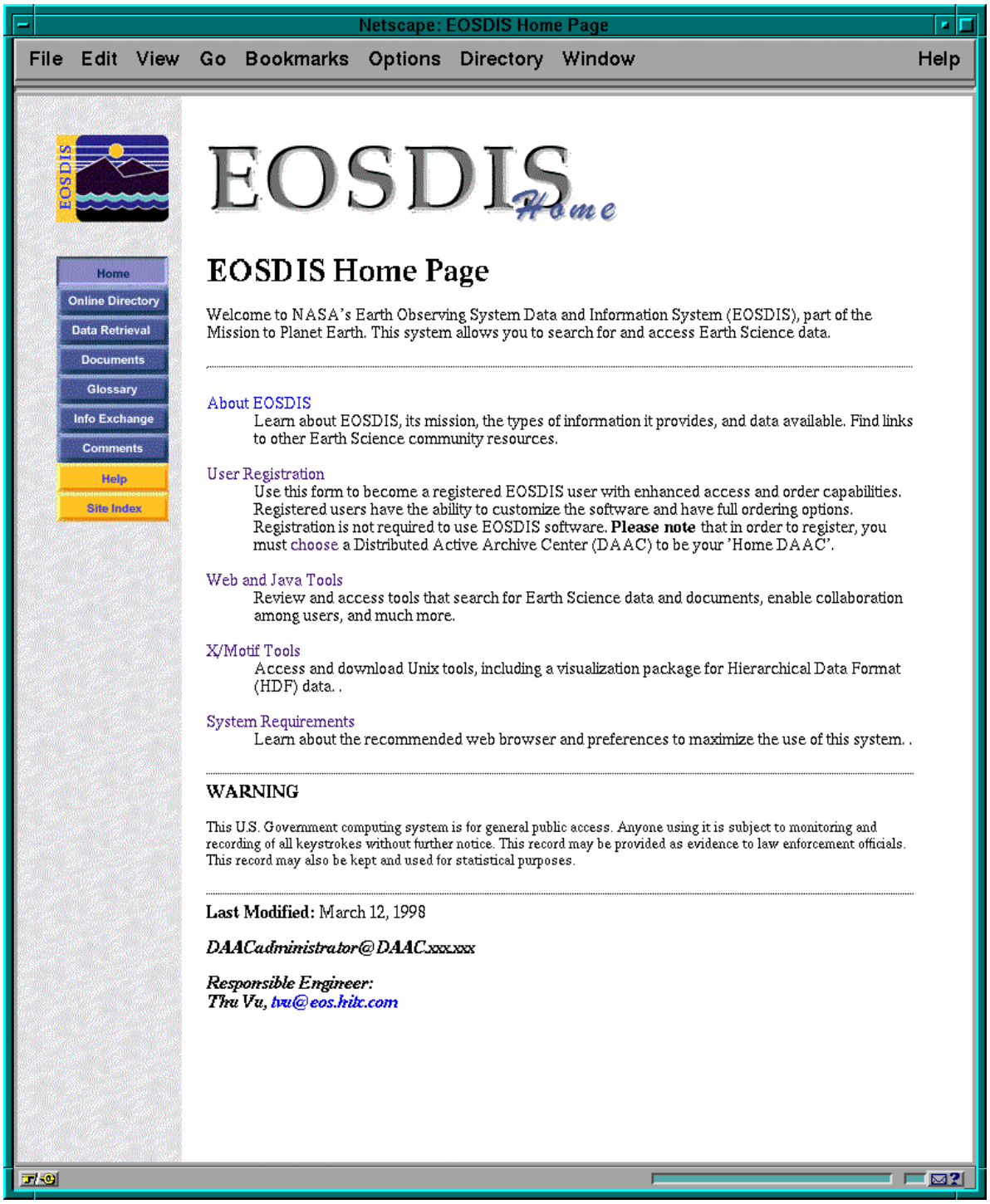

Figure 4.12.6-1. EOSDIS Home Page (Main Screen)

4.12.6.2.1 User Registration - Choose a Home DAAC Page

Clicking on the "User Registration" link shown on the EOSDIS Home Page brings up the "Choose a Home DAAC" page shown in the two Figures 4.12.6-2 and 4.12.6-3. Please note that this is a unique web page that has been broken down in two complementary figures in this document for readability purpose.

The web page is divided in three different regions.

The first one gives a brief explanation of the reasons why a home DAAC should be selected by the user (see Figure 4.12.6-2).

The second region allows the user to select from a table the preferred DAAC either based on the DAAC scientific area(s) of interest or based on the DAAC geographical location. Links are also available both to visit the DAAC web sites for gathering further information and to move directly to the proper registration page of the selected DAAC. Note that, as shown in Figure 4.12.6-2, not all of the listed DAACs are presently able to accept user registration applications.

Finally, the third region is a clickable map that takes the user directly to the registration page of the desired DAAC (refer to Figure 4.12.6-3). Also in this case some of the DAACs are shown as not presently able to accept user registration applications (their names appear grayed-out on the map).

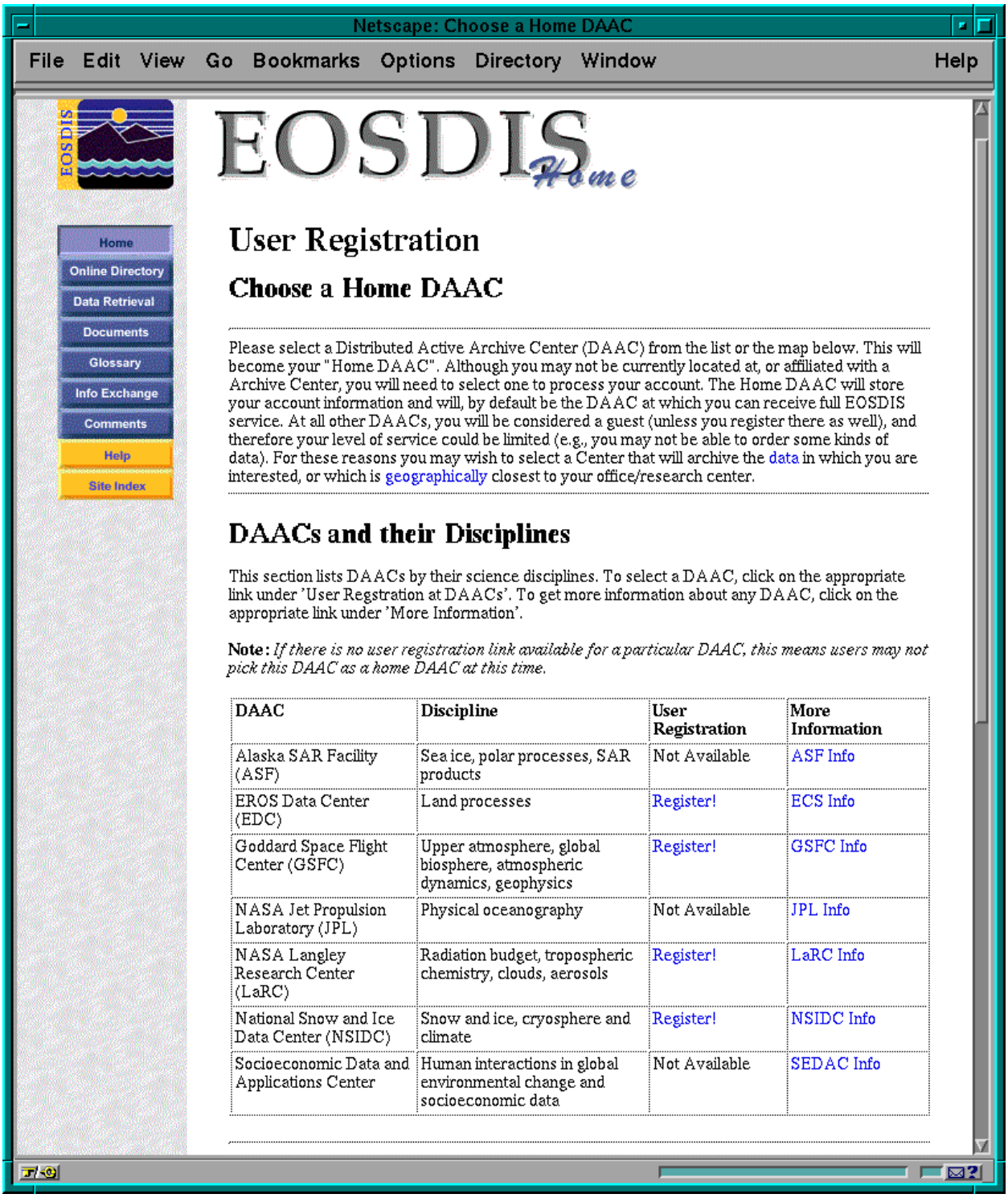

Figure 4.12.6-2. Choose a Home DAAC Page - Upper Portion

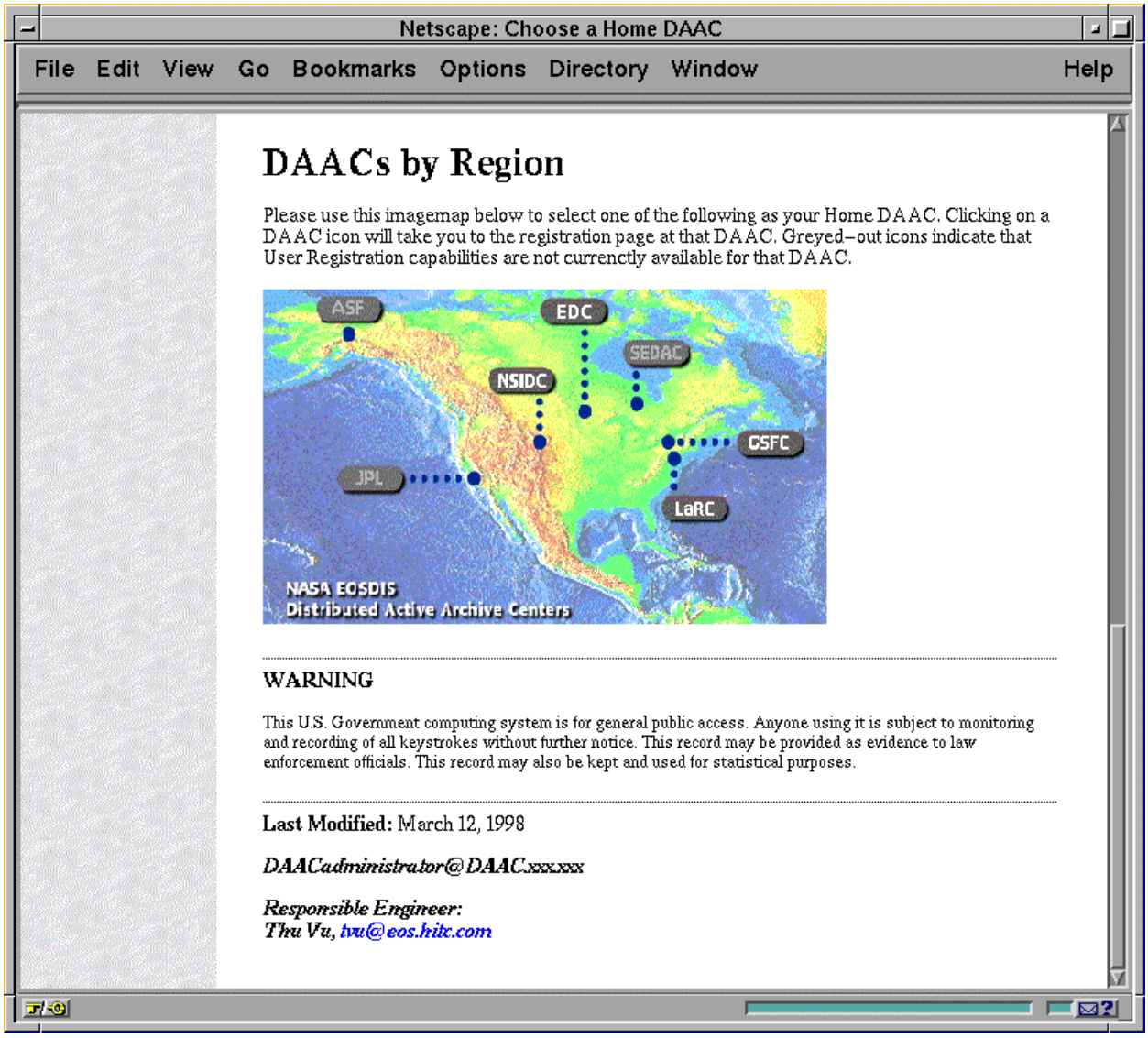

Figure 4.12.6-3. Choose a Home DAAC Page - Lower Portion

4.12.6.2.2 EOSDIS User Registration Page

After selecting the home DAAC as described earlier, the user is presented with the registration form shown in Figure 4.12.6-4 and 4.12.6-5 (also in this case a single web page has been split in two figures). The first part of the registration form is concerned with User Information, the second one with the user Mailing Address. Table 4.12.6-2 describes each field included in the User Registration form.

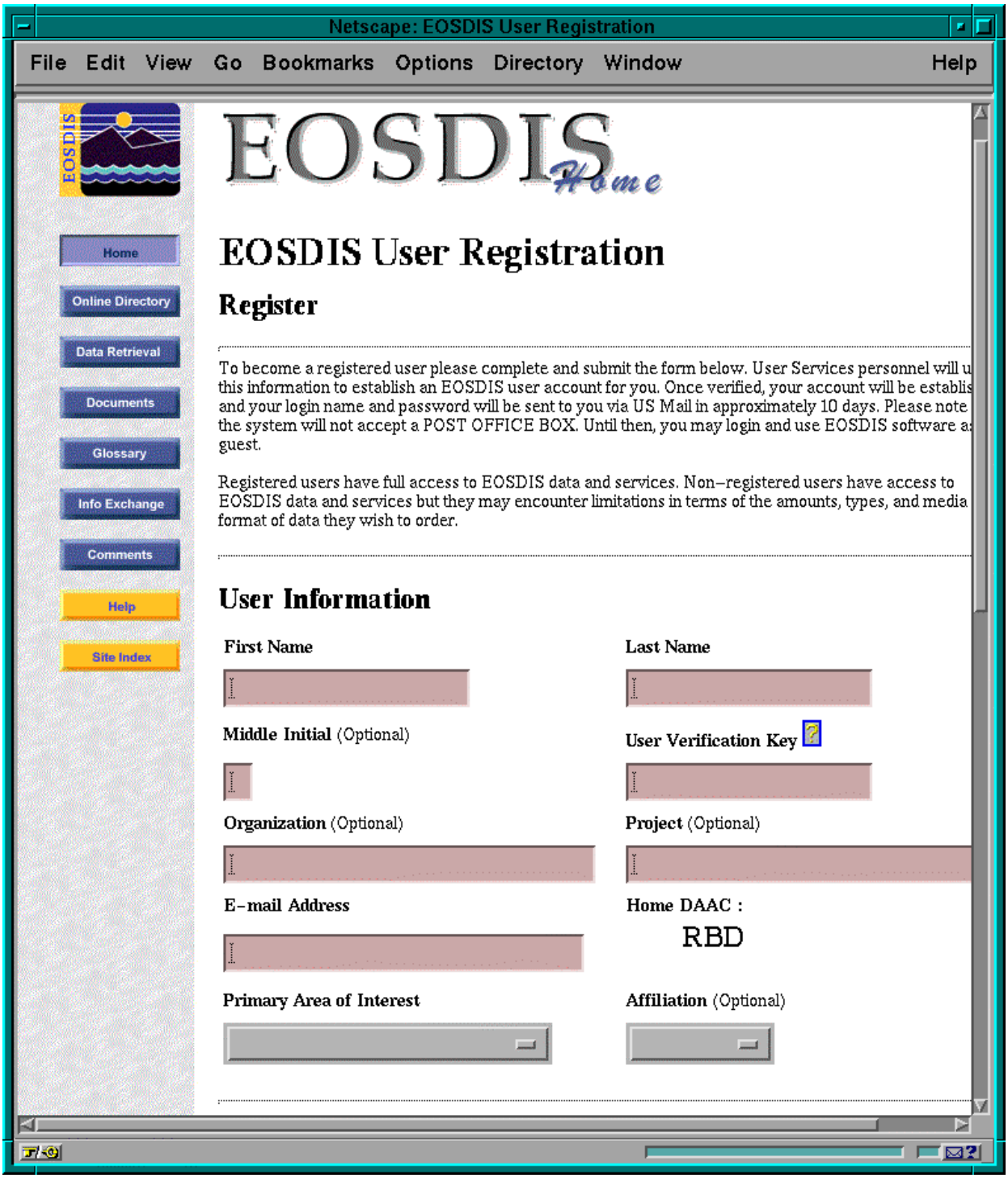

Figure 4.12.6-4. User Registration Form - Upper Portion

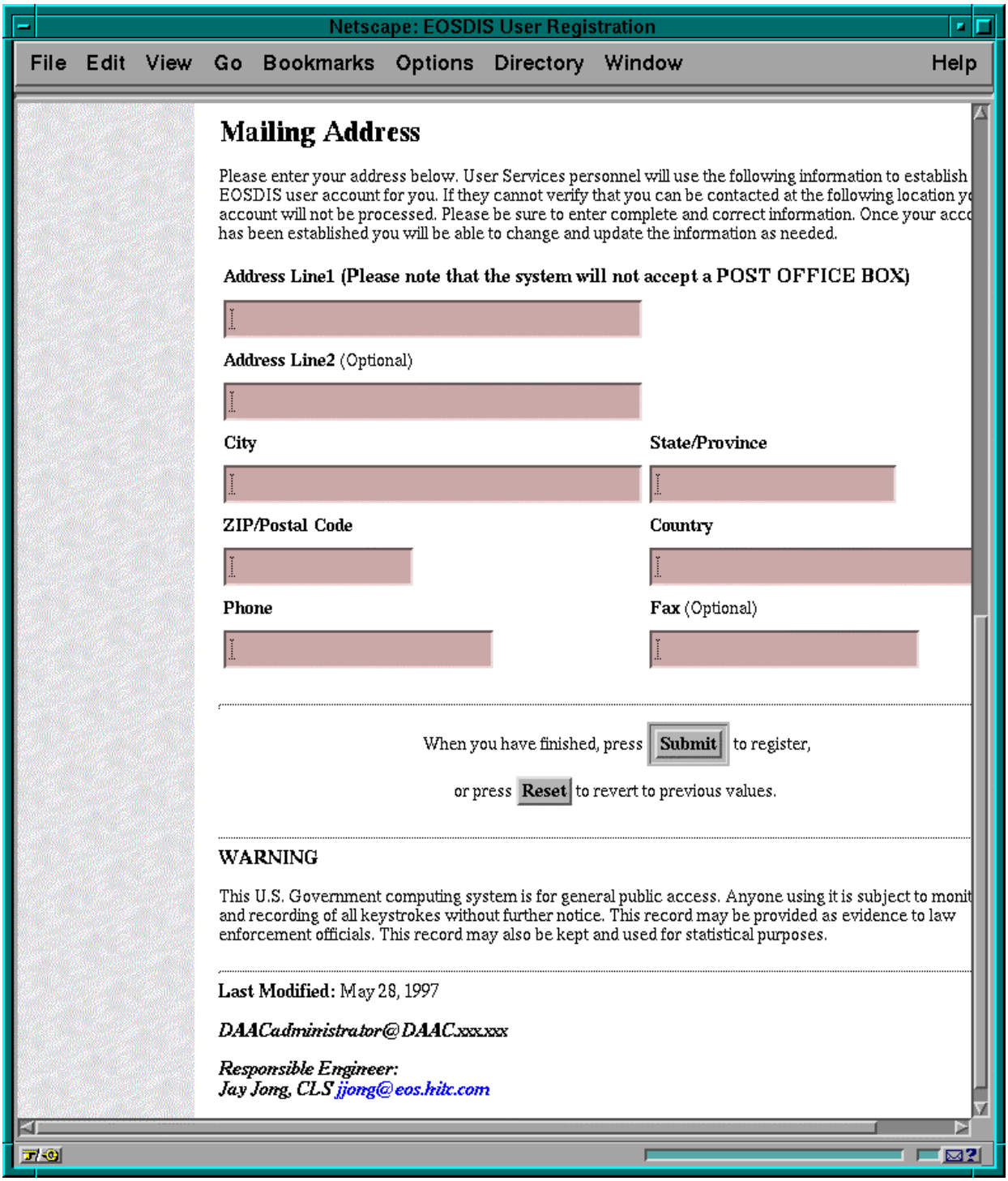

Figure 4.12.6-5. User Registration Form - Lower Portion

Table 4.12.6-2. EOSDIS User Registration Page - Data Types Field Description

Field Name	Data Type	Size	Entry	Description
First Name	character	20	Required	User first name
Last Name	character	20	Required	User last name
Middle Initial	character	1	Optional	User middle initial
User Verification Key	character	20	Required	Key chosen by the user for verification purpose.
Organization	character	31	Optional	User association
Project	character	30	Optional	Current User Project
E-mail Address	character	64	Required	User e-mail address
Home DAAC	character	3	System generated	Read-only field that reports the three-letter ID for the user selected home DAAC
Address Line-1	character	35	Required	Street portion of the user address
Address Line-2	character	35	Optional	Street portion of the use address (alternative)
City	character	35	Required	City portion of the user mailing address
State/province	character	20	Required	State portion of the user mailing address
ZIP/Postal Code	character	15	Required	ZIP code portion of the user mailing address
Country	character	30	Required	Country portion of the user mailing address
Phone	character	22	Required	User Phone Number
Fax	character	22	Optional	User Fax Number

Additional graphical elements are made available on the form to the users to specify their scientific and professional interests. Two drop-down selection buttons let the user specify Primary area of Interest (e.g., Geophysics, Global Biosphere) and Affiliation (e.g., K-12, Commercial, Government).

A pop-up is displayed when the user clicks on the link available near the User Verification Key field. The pop-up, shown in Figure 4.12.6-6, provides a brief explanation of the purpose of the Verification Key. The user closes the pop-up window by clicking the **OK** button.

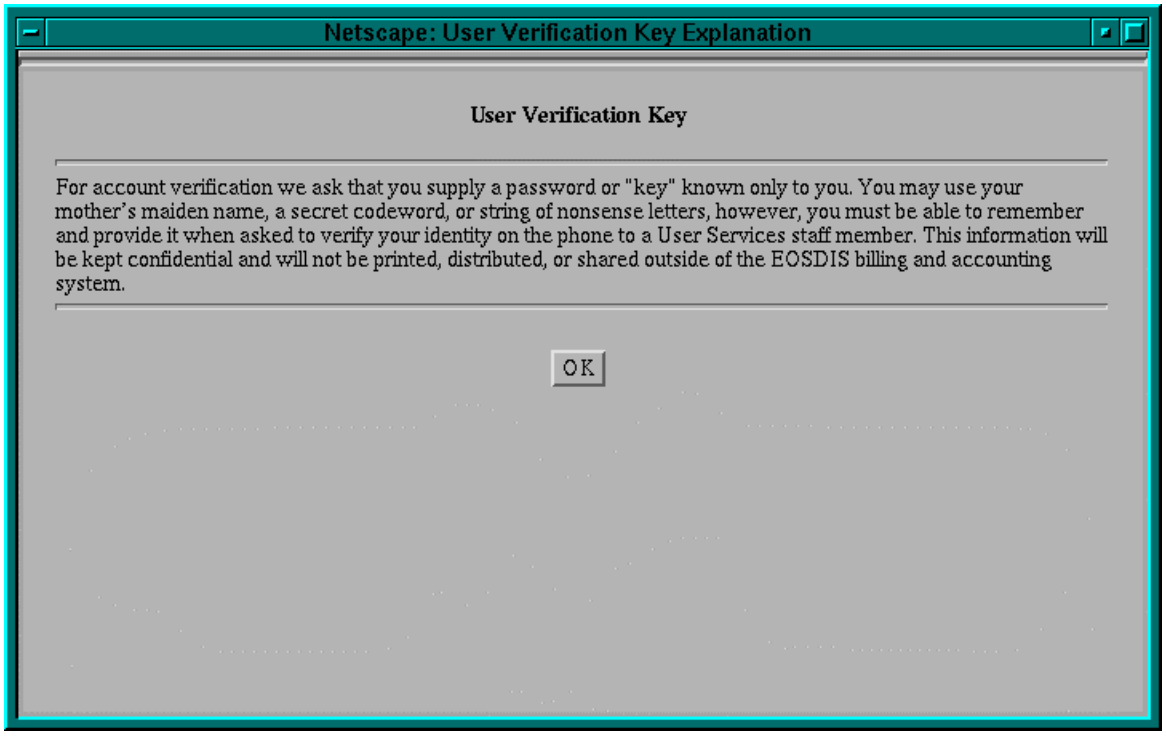

Figure 4.12.6-6. User Verification Key Pop-up

The users can reset the form contents and restart the input of data at any moment by clicking the **Reset** button at the bottom of the page.

When the user finishes filling in all of the registration form fields, the Registration application can be submitted by clicking on the **Submit** button. Note that if any (required) field is left blank or is not in a valid format the HTML source page issues related error messages to the Users. Two sample pop-ups, one warning that the required First Name field has been left blank and the other warning that the e-mail address in not in the correct format are shown, respectively, in Figure 4.12.6-7 and Figure 4.12.6-8.

Figure 4.12.6-7. User Registration Pop-up - User First name missing

Figure 4.12.6-8. User Registration Pop-up - Wrong E-mail Address Format

After the form is submitted a new page re-displays the same form for confirmation. The page has the same appearance as the one discussed previously, so the field and graphical component descriptions will not be repeated here. The only differences with the previous page are the background color and the content of the page introduction, as shown in the Figure 4.12.6-9.

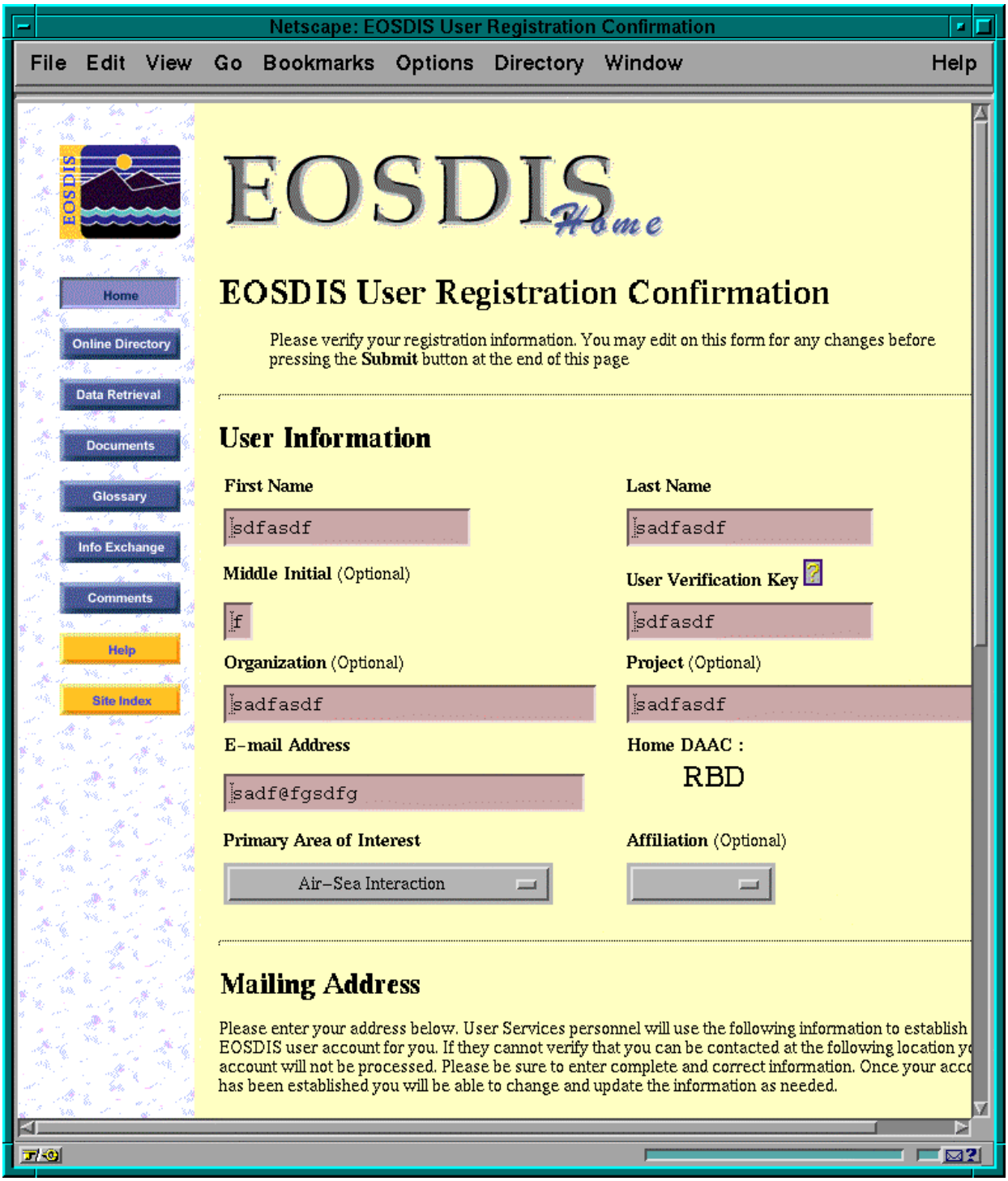

Figure 4.12.6-9. User Registration Confirmation Page

Although the form can still be edited, the fields are now filled in with the information previously submitted. The user can change this information, if needed, and re-submit the form for final approval.

A new HTML page confirms that the registration application has been processed and accepted by the ECS system (see Figure 4.12.6-10) or alerts that the application could not be processed for the unavailability of the System Management server (see Figure 4.12.6-11).

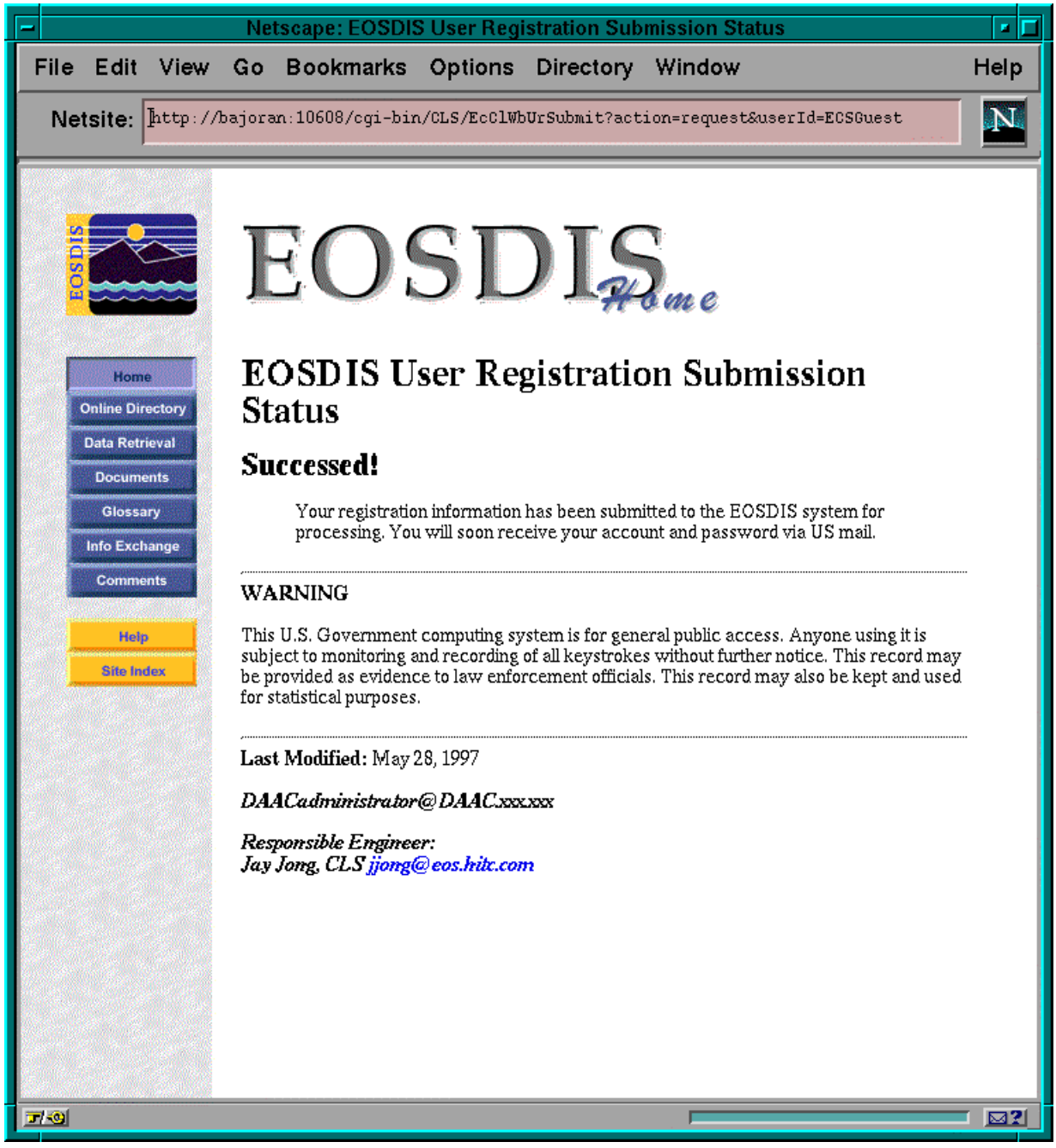

Figure 4.12.6-10. Successful User Registration Status Page

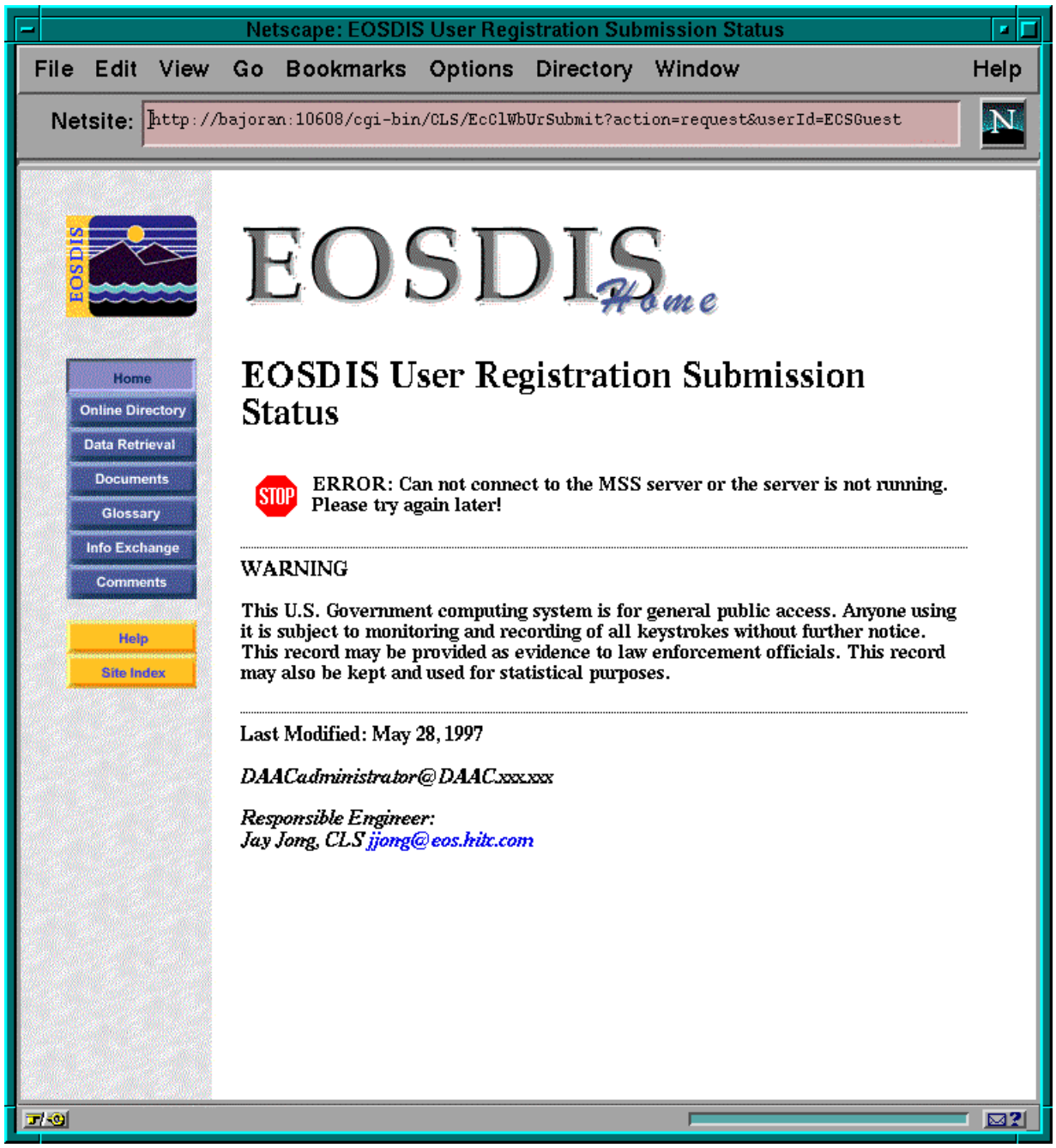

Figure 4.12.6-11. Unsuccessful User Registration Status Page

4.12.6.3 Required Operating Environment

For information on the operating environment, tunable parameters, and environment variables refer to the 920-TDx-013 "Custom Code Configuration Parameters" documentation series. The "x" refers to the installed location, e.g., 920-TDG-013 is for GSFC DAAC.

4.12.6.3.1 Interfaces and Data Types

Table 4.12.6-3 lists the supporting products that this tool depends upon in order to function properly.

Table 4.12.6-3. User Registration Interface Protocols

Product Dependency	Protocols Used	Comments
Netscape (both client and server)	http	via cgi scripts

4.12.6.4 Databases

User Registration information is maintained on the MSS database. The MSS database description for Release 4 is found in ECS document 311-CD-105-005, *Management Support Subsystem Database Design and Schema Specifications for the ECS Project*. The operator may have to identify individual data fields by examination of the descriptions in the documentation. Some data may be directly accessible through the database software.

4.12.6.5 Special Constraints

In order to complete the User Registration process the MSS provided Accountability Service must be available, as shown in paragraph 4.12.6.2.

4.12.6.6 Outputs

The User Registration Tool displays the information discussed in Section 4.12.6.2, and may update the database described in Section 4.12.6.4.

4.12.6.7 Event and Error Messages

Both event and error messages are listed in Appendix A.

4.12.6.8 Reports

No reports are produced by the User Registration Tool.

4.12.7 Subscription Server

Subscriptions permit users to register their interest in changes to (and other events associated with) data and services using a common service function called the Subscription Service. ECS services will describe their support for subscriptions in their advertisement. To use subscriptions a Subscription Request is registered with the Subscription Service. This tool, the Subscription Server GUI, allows operators to manage Subscription Requests. The Subscription Server accepts new Subscription Requests that specify an event for initiation and the action to be taken in response to the event. It will also accept and validate the Subscription Requests, identify all subscriptions of a specified event and process any action defined in the subscription. The Subscription Server GUI uses e-mail to notify science user subscribers. Table 4.12.7-1 summarizes the operational capabilities of the Subscription Server GUI.

Table 4.12.7-1. ECS Subscription Server Functions

Operating Function	Command/Script or GUI	Description	When and Why to Use
Add subscription	Add Subscription	Allows operators to add a known subscription.	Add new subscriptions.
Edit subscription	Edit Subscription	Allows operators to edit a known subscription.	Operators may edit existing subscriptions, User ID, email text, start date, expiration date and data associated with actions.
Filter subscription	Filter Subscription	Allows operators to filter subscriptions.	Operators may filter subscriptions by Event ID, User ID, Expire Date, or by original list of resources (All) in Subscription Information list.
Delete multiple subscriptions	Delete Multiple Subscriptions	Allows operators to delete subscriptions.	Operators may delete multiple subscriptions by Event ID, User ID, Expire Date, or by original list of resources (All) as listed in Subscription Information GUI (see figure 4.12.7-2).
Delete subscription	Delete Subscription	Operator may highlight a subscription in the main screen and delete that subscription.	Operators may delete only one subscription.
Refresh subscription	Refresh Subscription	Refresh displayed subscriptions on the main screen.	Operators may refresh all subscriptions by getting all the information from database.
Refresh events	Refresh Events	Refresh displayed events on the main screen event tab.	Refreshing events will retrieve all current events from the Subscription server database.
Set DAAC	Set DAAC	Set the DAAC from which to retrieve subscriptions and events.	Users may set the DAAC from which to retrieve subscriptions and events.

4.12.7.1 Quick Start Using Subscription Server

To execute theSubscription Server GUI from the command line prompt, enter:

>EcSbSubServerGUIStart <mode>

Where:

<**mode**> is the ECS mode for the execution, e.g., OPS, TS1.

4.12.7.2 Subscription Server Main Screen

The Subscription Server GUI provides operations personnel at the DAAC the capability to manage Subscription Requests. The main screen has two tabs; one for showing available subscriptions and the other for showing existing events. Operators can use this tool to edit existing subscriptions or add new ones. Figure 4.12.7-1 shows the **subscriptions** tab screen layout.

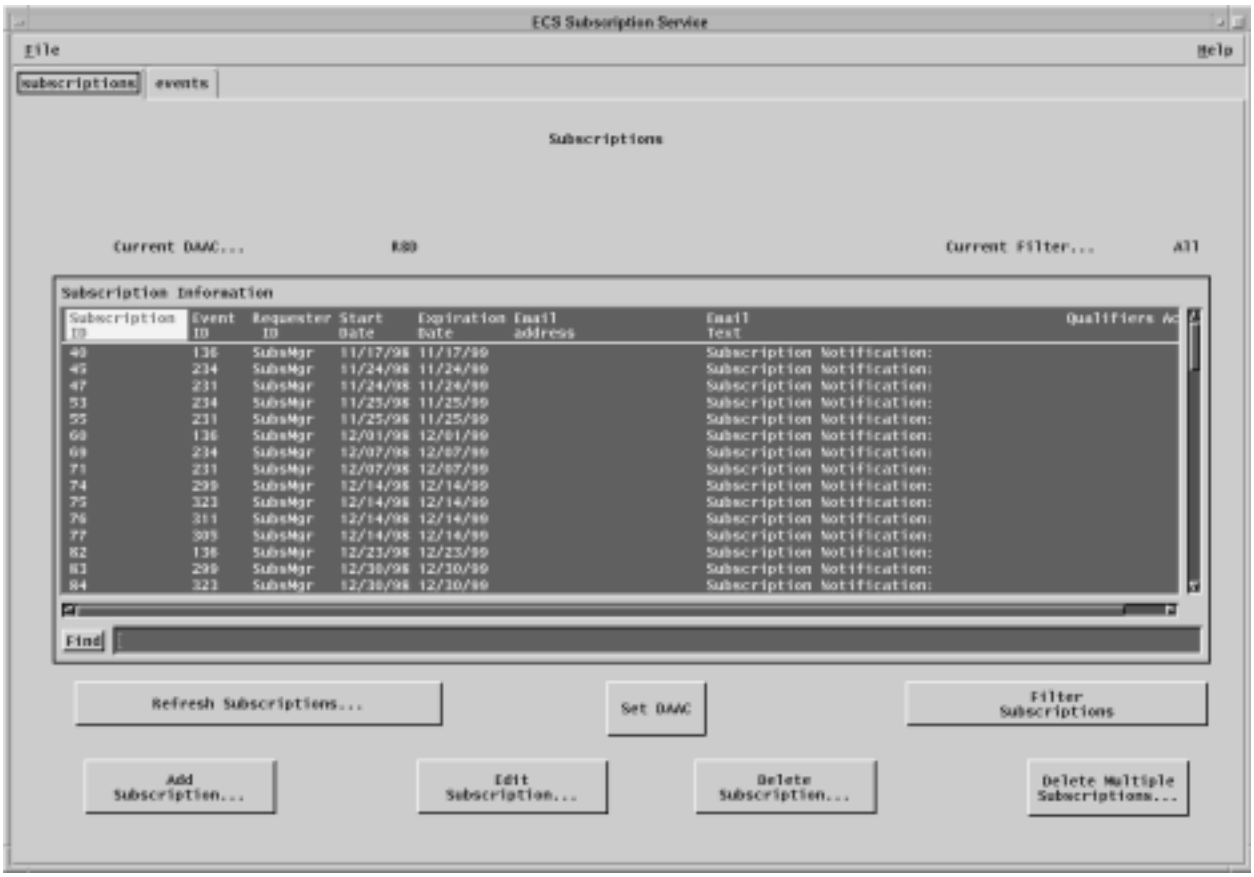

Figure 4.12.7-1. Subscription Server GUI – subscriptions Tab

Table 4.12.7-2 describes the **subscriptions** tab fields.

Table 4.12.7-2. subscriptions Tab Field Descriptions

Field Name	Data Type	Size	Entry	Description
Current Filter	character	10	display	Shows the filter selections from the Filter Subscription GUI (Figure 4.12.7-7).
Subscription ID	character	100	display	Unique identifier for subscriptions.
Event ID	character	100	display	Unique identifier for the event used to trigger this subscription.
Requestor ID	variable character	100	display	Identify the user that submitted the subscription.
Start Date	date/time	8	display	Display the Greenwich Mean Time (GMT), mm/dd/yyy-hh:mm, the subscription was entered into the subscription server.
Expiration Date	date/time	8	display	Display the Greenwich Mean Time (GMT), mm/dd/yyy-hh:mm, the subscription will expire and removed from the system.
Email Address	variable character	100	display	Email Address of Requestor.
Email Text	variable character	unlimited	display	Display information related to subscription.
Qualifiers	character	1	display	Indicates by Y or N whether any qualifiers have been specified for the subscription (Figure 4.12.7-5).
Action	character	1	display	Indicates by Y or N whether any actions have been specified for the subscription, (Figure 4.12.7-5).
Find	character	255	optional	This field can be used to search for any of entries listed on subscription GUI. If the list is long, operator can use this field to search on subscription ID, events ID, start/expiration date, email address, and email text.

A list and description of subscription events can be obtained by clicking on the **events** tab on the main screen. The **events** tab screen layout is shown in Figure 4.12.7-2.

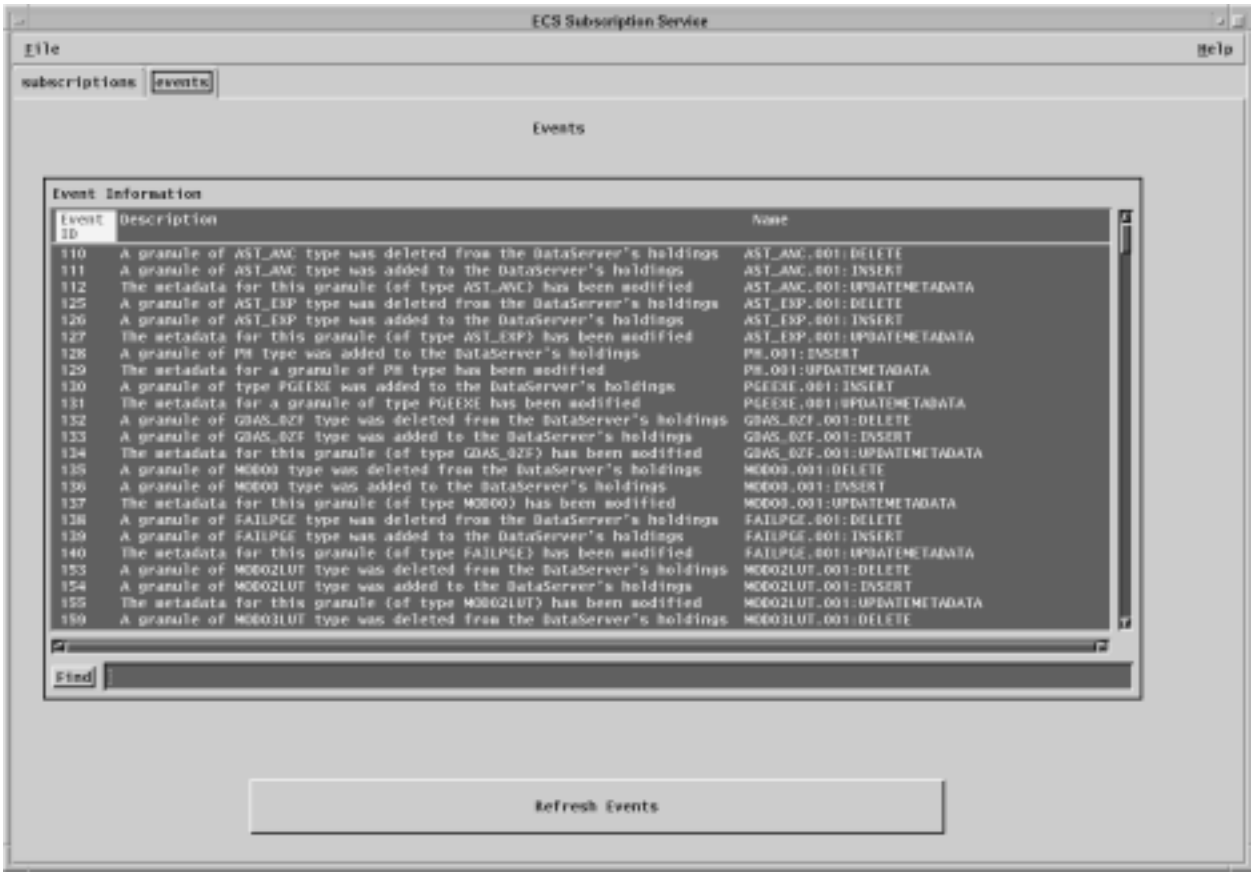

Figure 4.12.7-2. Subscription Server GUI Main Screen – events Tab

Table 4.12.7-3 describes the **event** tab fields.

Table 4.12.7-3. events Tab Field Descriptions

Field Name	Data Type	Size	Entry	Description
Event ID	character	N/A	Display from database	Unique identifier for a subscribable event.
Description	character	N/A	Display from database	Description of the event.
Name	character	N/A	Display from database	Name of the event.

4.12.7.2.1 Add/Edit Subscription

Clicking on the **Add Subscription…** or **Edit Subscription…** button on the main screen (Figure 4.12.7-1) will bring up the Add/Edit Subscription Screen shown in Figure 4.12.7-3. This screen is used to add a new subscription in response to a requester's email or telephone call, or to change an existing subscription for a requester. A Subscription Request requires the information collected on this screen; Event ID name, Event Description, requester User ID, email address and

text, start date, expiration date can be defined by using this screen. The **Browse Events** button displays the Browse Event Screen (Figure 4.12.7-4). Selecting an event in the Event Information window of the Browse Event Screen will fill the **Event ID** and **Event Description** fields. The **User Profile** button is used to populate the **Email Address** field for a **User ID**. If the User Profile information is not available, operator needs to enter the requestor's **Email** information manually. Operator needs to enter the email text in the **Email Text** field, this will be used for email notification for the subscriber. **Expiration Date** for the Subscription has to be later than **Start Date**, or an error dialog box will be displayed. Clicking on **Submit** will submit the Subscription Request and shows the new subscription on Main Screen in the Subscription Information window with the appropriate button(edit or add) selected.

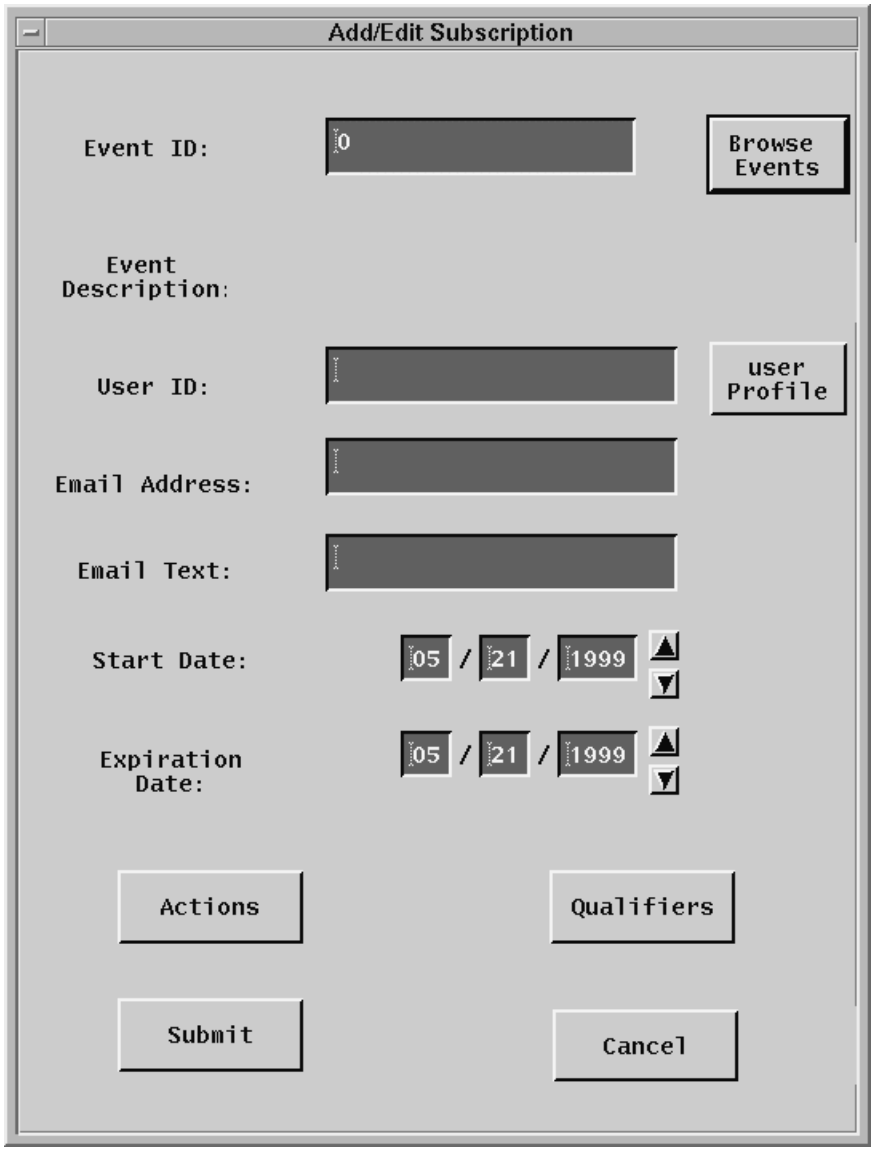

Figure 4.12.7-3. Add/Edit Subscription Screen

Table 4.12.7-4 lists and describes the Add/Edit Subscription GUI fields:

Table 4.12.7-4. Add/Edit Subscription Field Descriptions

Field Name	Data Type	Size	Entry	Description
Event ID	Character	N/A	Required	Unique identifier for a subscribable event.
User ID	variable character	100	required	Identify the user that submitted the subscription.
Email Address	variable character	100	required	Provide user's email address.
Email Text	variable character	unlimited	required	Text the user has specified to be included in the e-mail sent each time a specified event has occurred.
Start Date	date/time	8	required	Display the date the subscription was entered into the subscription server. Greenwich Mean Time (GMT) is in the format: mm/dd/yyyy
Expiration Date	date/time	8	required	Display the date the subscription will expire and be removed from the system. Greenwich Mean Time (GMT) is in the format: mm/dd/yyyy.

4.12.7.2.2 Browse Events

To browse events, click on the Browse Events button of the Add/Edit Subscription Screen, activating the Browse Event GUI shown in Figure 4.12.7-4. This GUI provides a list of event's ID, description, and name. The Event ID, Description, and Name selected by the operator will be shown in the Add/Edit Subscription Screen.

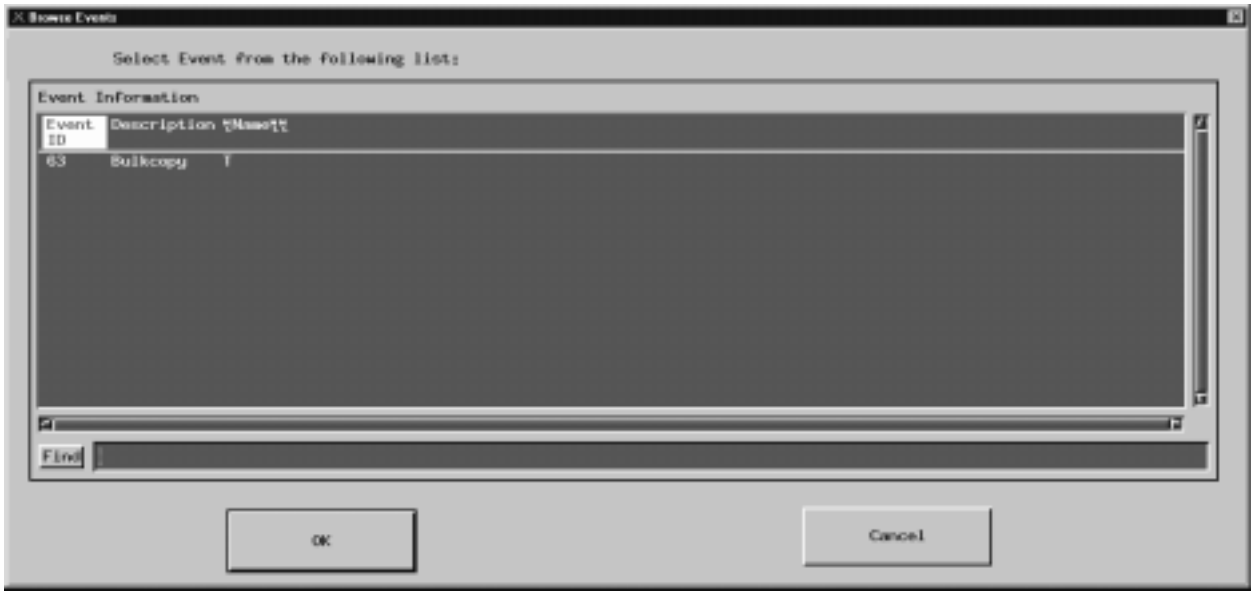

Figure 4.12.7-4. Browse Event Screen

Table 4.12.7-5 describes the fields in the Browse Event screen.

Table 4.12.7-5. Browse Event Field Descriptions

Field Name	Data Type	Size	Entry	Description
Event ID	character	N/A	display from database	Unique identifier for a subscribable event.
Description	character	N/A	display from database	Description of the event.
Name	character	N/A	display from database	Name of the event.
Find	character	255	optional	This field can be used to search for any of entries listed on browse event GUI. If the list is long, operator can use this field to search on name, description, and event ID.

4.12.7.2.3 Actions

Clicking on **Actions** from the Add/Edit Subscription GUI will bring up the Actions Screen, Figure 4.12.7-5. The operator may choose either **FTP Push** or **8 MM tape** as an action to be performed in addition to email notification that the subscriber wants to occur as the consequence of the subscribed event. **Ftp Push** selects automatic file transfer protocol as an action to be performed and **8 MM tape** selects the generation and shipping of 8 mm tape as an action to be performed when the subscribed event occurs. If **Ftp Push** is selected, the operator will need to fill in all the fields as described in Table 4.12.7-6. The password will be entered twice to verify the user has typed it correctly. For security reasons, the password will be encrypted when the subscription is sent to the Subscription Server. In the case of selecting an **8 MM tape**, the operator only needs to fill in the user profile. **OK** will save all the information and the screen will return to the Add/Edit Subscription Screen.

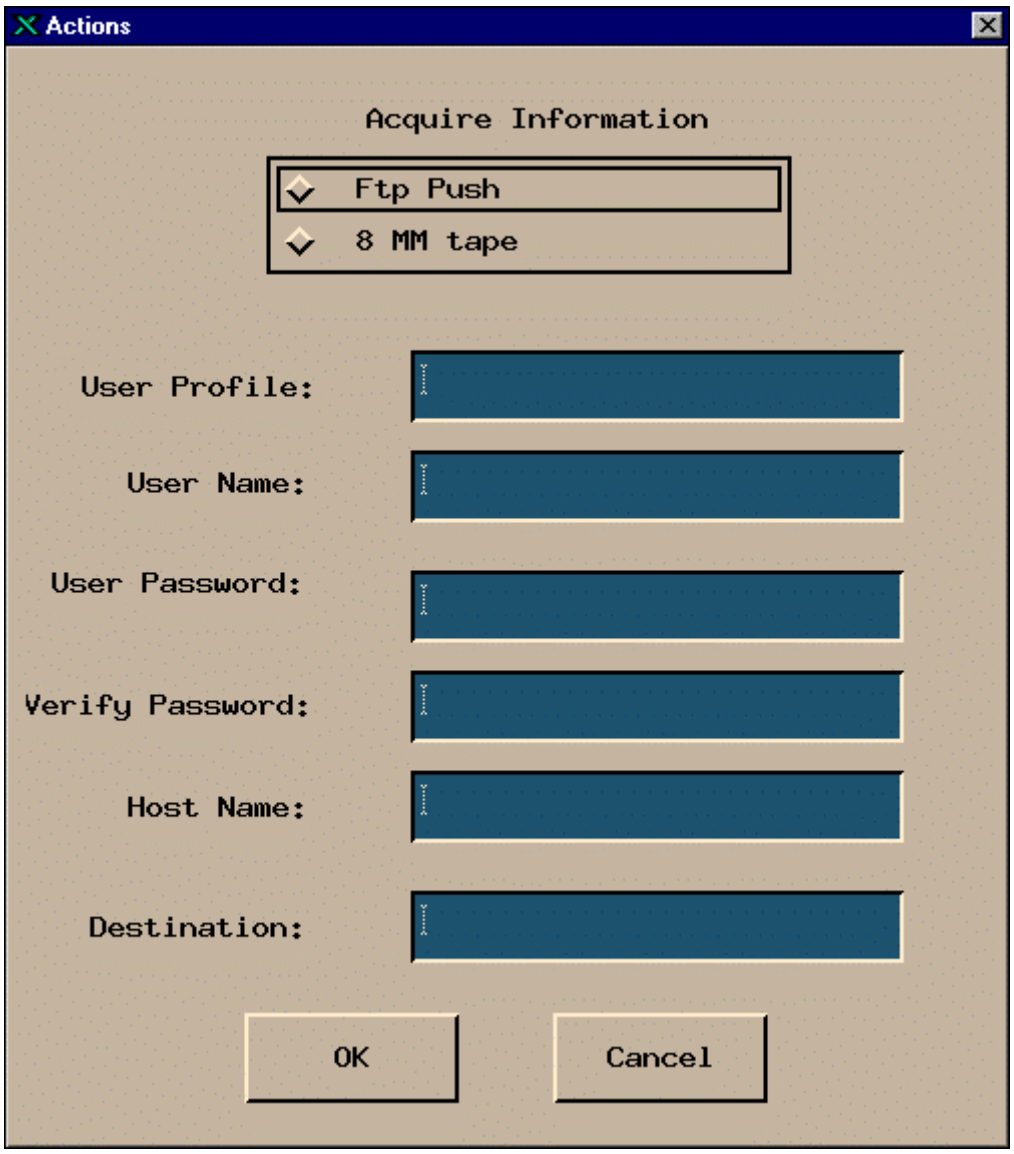

Figure 4.12.7-5. Actions Screen

Table 4.12.7-6 describes the fields in the Actions screen.

Table 4.12.7-6. Actions Field Descriptions

Field Name	Data Type	Size	Entry	Description
Ftp Push	N/A	N/A	required for Ftp push only	It will select the ftp push as an action to be performed when the subscription event occurs.
8 mm tape	N/A	N/A	required for 8mm tape only	It will select the 8 MM tape as an action to be performed when the subscription event occurs. The tape will be shipped to subscriber.
User Profile	variable character	255	required (only if 8 MM Tape is selected by operators)	Display the user profile. This field must be completed if operator selects 8 MM tape as an action to be performed when the subscription event occurs.
User Name	variable character	100	required for Ftp push only	Identify the user who submitted the subscription or event.
User Password	variable character	100	required for Ftp push only	Specifies unique identifier of a registered user.
Verify Password	variable character	100	required for Ftp push only	Second entry of the user password.
Host Name	variable character	100	required for Ftp push only	Host to which data is to be transferred
Destination	variable character	unlimited	required for Ftp push only	Specifies the site to which data is to be transferred

4.12.7.2.4 Qualifier

Clicking on **Qualifier** from the Add./Edit Subscription Screen will bring up the Qualifiers Screen, Figure 4.12.7-6. This screen will show the qualifiers name associated with the selected event. First, the operator must select a qualifier and then an appropriate operator and value. Clicking on **Add to the list** button will add the selected operation and value of that qualifier to the qualifier list. The operator may add multiple qualifiers to the information list. **OK** will save all the information and the operator will return to Add/Edit Subscription Screen.

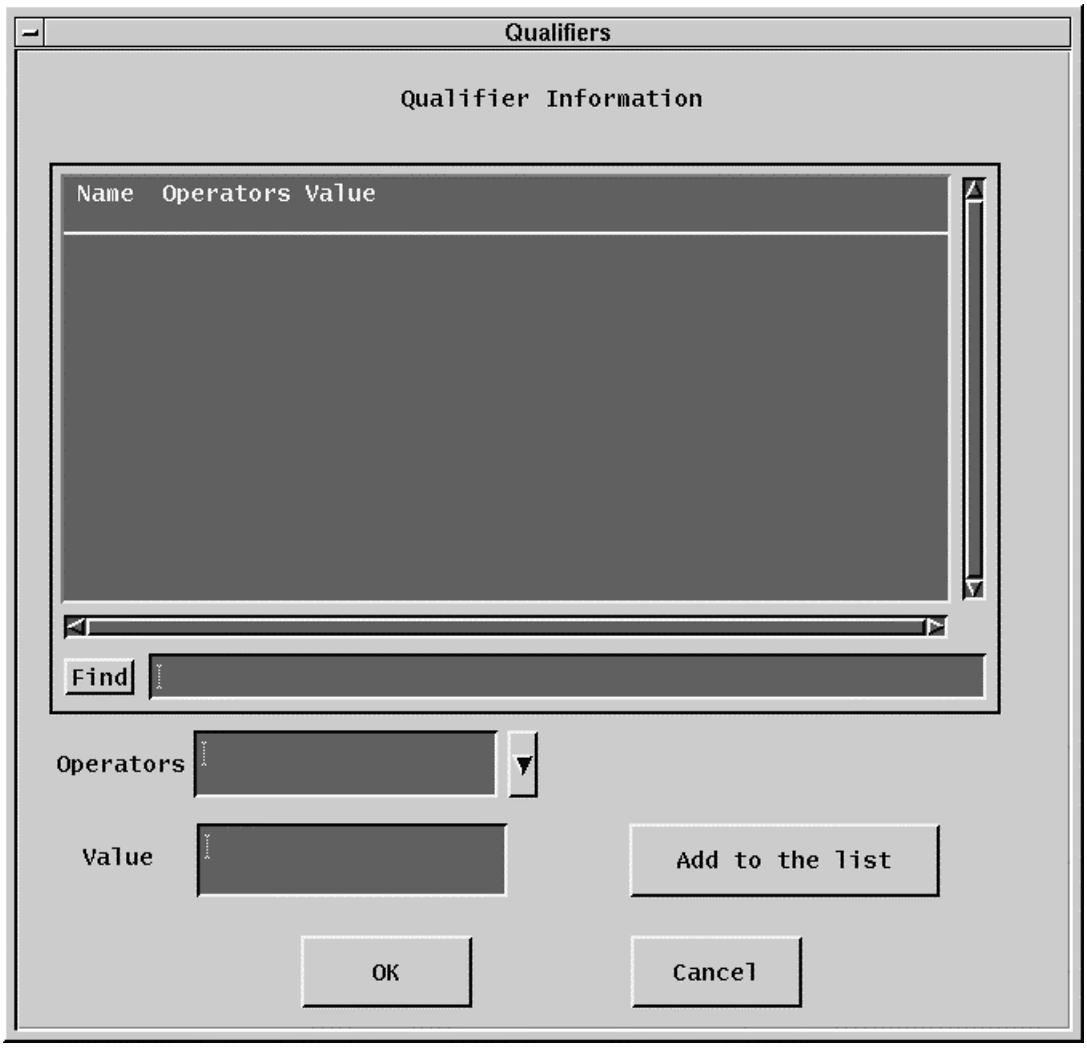

Figure 4.12.7-6. Qualifiers Screen

Table 4.12.7-7 describes the fields in the Qualifiers screen.

Table 4.12.7-7. Qualifiers Field Descriptions

Field Name	Data Type	Size	Entry	Description
Name	Character		display from database	Qualifier name
Operators(data)	Character	N/A	selected from list	A list of operators (data) (i.e., ==, <, >, !=) are provided in a pull down list. Operators(computer) must select an appropriate operator (data) which delimits the value entry and enter value for the qualifier.
Value	Integer	N/A	typed in by operator	Identifies the specific instance of a subscribable event.

4.12.7.2.5 Filter Subscriptions

Clicking on the **Filter Subscriptions** button on the main screen brings up the Filter dialog Screen shown in Figure 4.12.7-7. This screen allows operators to filter subscriptions by Event ID, User ID, Expire Date, or by original list of resources (All) in the Subscription Information list of the main screen. The operator must select one of the fields in the box. Selection is indicated by an outline around the name. To the right of the outlined selection is an input box to enter the value of the filter. The **OK** button will return to the Main Screen and display the selected Filter in the upper left part.

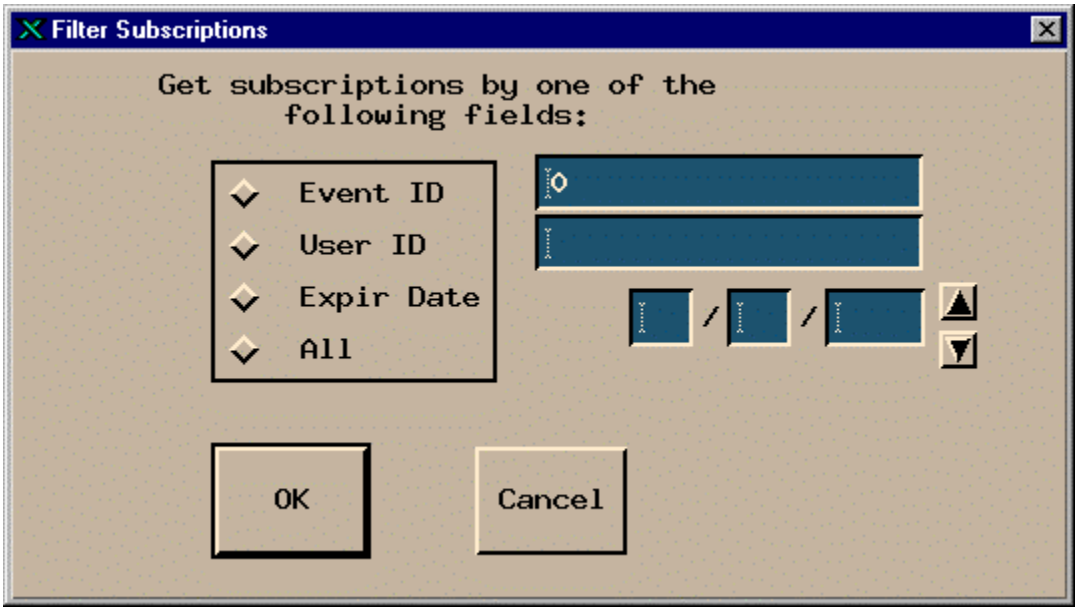

Figure 4.12.7-7. Filter Subscription Screen

Table 4.12.7-8 describes the fields in the Filter Subscription screen.

Table 4.12.7-8. Filter Subscription Field Descriptions

Field Name	Data Type	Size	Entry	Description
Event ID	long integer	N/A	optional	Identifier of the event.
User ID	variable character	100	system generated	Identity of the user who submitted the subscription.
Expire Date	date/time	2/2/4	optional	Display the Greenwich Mean Time (GMT), mm/dd/yyyy, the subscription will expire and removed from the system.
All	N/A	N/A	optional	Selects the original list of resources including Event ID, User Id, and Expire Date.

4.12.7.2.6 Delete Multiple subscriptions by one of the following fields

Clicking on the **Delete Subscription…** button on the main screen brings up the Delete Subscriptions dialog shown in Figure 4.12.7-8. This screen allows operators to delete subscriptions by Event ID, User ID, Expire Date, or by original list of resources (All) as listed in Subscription Information list of the main screen. The operator must select one of the fields in the box. Selection is indicated by an outline around the name. To the right of the outlined selection is an input box to enter the value of the filter. **OK** will save all the inputs and return to main screen.

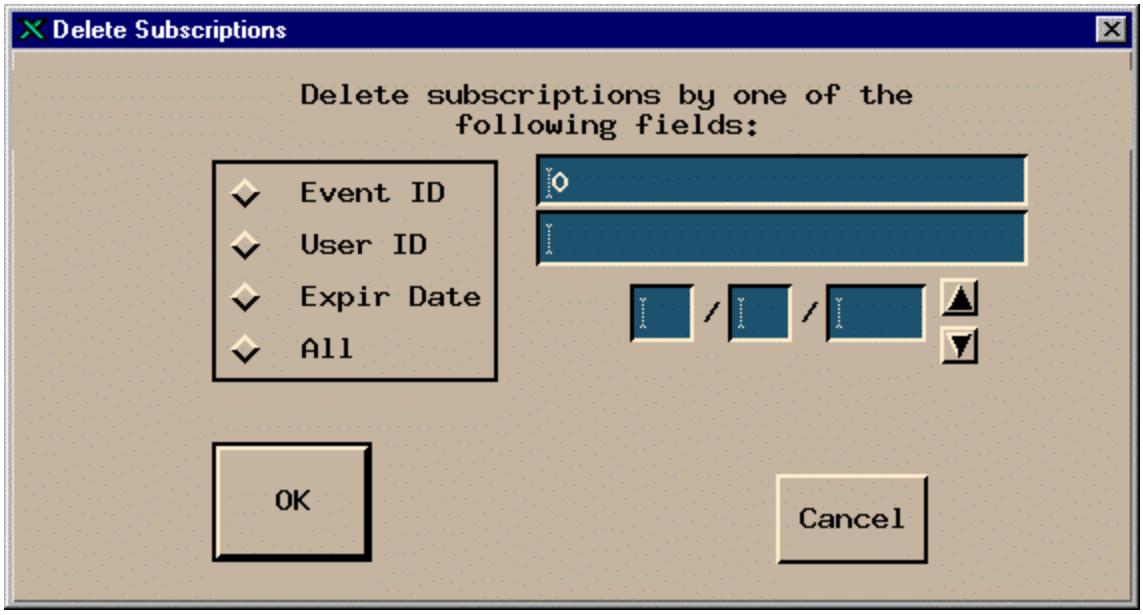

Figure 4.12.7-8. Delete Subscriptions Dialog

Table 4.12.7-9 describes the fields in the Delete Subscriptions screen.

Table 4.12.7-9. Delete Subscriptions Field Descriptions

Field Name	Data Type	Size	Entry	Description
Event ID	long integer	N/A	optional	Identifier of the event.
User ID	variable character	100	system generated	Identify the user who submitted the subscription.
Expire Date	date/time	2/2/4	optional	Display the date the subscription will expire and removed from the system. Greenwich Mean Time (GMT) is in the format: mm/dd/yyyy.
All	N/A	N/A	optional	Selects the original list of resources including Event ID, User Id, and Expire Date.

4.12.7.2.7 Refresh Subscription

Clicking on the **Refresh Subscriptions….** button on the main screen (Figure 4.12.7-1**)** will redisplay the screen reflecting any changes made since the last refresh.

4.12.7.2.8 Refresh Events

Clicking on the **Refresh Events** button on the main screen event tab (Figure 4.12.7-1) will redisplay the screen reflecting any changes made since the last refresh.

4.12.7.3 Required Operating Environment

For information on the operating environment, tunable parameters and environment variables of Subscription Server refer to the 920-TDx-013 "Custom Code Configuration Parameters" documentation series. The "x" refers to the installed location, e.g., 920-TDG-013 is for the GSFC DAAC.

4.12.7.3.1 Interfaces and Data Types

The Subscription Server GUI exchanges data of various types through interfaces within and external to ECS. Table 4.12.7-10 lists the Subscription Server's interfaces for Version 2.0.

Table 4.12.7-10. Interfaces Protocols

Interface	Type of Primary Interface Protocols	Type of Backup Interface Protocols	Comments
Subscription Server GUI to Subscription Server	Asynchronous requests/responses	none	The GUI is separate from the Subscription Server. The GUI acts as a client to the Subscription Server.
Subscription Server GUI to other ECS components	Synchronous requests/responses	none	Subscription Server GUI will retrieve User Profiles from the MSS Registered User server.
Subscription Server to other ECS components	Asynchronous requests/responses		Subscription Server will interface with these components as peer-to-peer: SDSRV: Register insert event with qualifiers Subscriber (CLS): Submit subscription with qualifiers and values and receive notifications from subscription server IOS: Discover advertisement Action Provider: Receive action request from subscription server and returns status and results

4.12.7.4 Databases

The Subscription Server accesses several ECS databases. Table 4.12.7-11 indicates the document for the individual databases used in the Subscription Server. The operator may have to identify individual data fields by examination of the descriptions in the documentation. Some data may be directly accessible through the database software.

Table 4.12.7-11. Subscription Server Database References

CI	Database documents for Version 2.0
DDIST	*Data Distribution Database Design and Schema Specifications*, 311-CD-101-005
IOS	*Interoperability Subsystem (IOS) Database Design and Schema Specifications,* 311-CD-104-005
MSS	*Management Support Subsystem Database Design and Schema Specifications*, 311-CD-105-005
PDPS	*Planning and Data Processing Subsystem Database Design and Schema Specifications*, 311-CD-106-005
SDSRV	*Science Data Server Database Design and Schema Specifications*, 311-CD-107-005

4.12.7.5 Special Constraints

None.

4.12.7.6 Outputs

The Subscription Server displays information on the various screens described above, sends the indicated E-mail notifications, and produces error messages.

4.12.7.7 Event and Error Messages

The Subscription Server GUI issues both status and error messages to indicate that a problem has occurred, and if the problem needs correction by the operations staff. Error messages are listed in Appendix A.

4.12.7.8 Reports

None.